

Building resilience in transient rural communities – a post-earthquake regional study: Scoping report



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Acronyms and abbreviations

CAB	Citizens Advice Bureau
CAM	Commercial Accommodation Monitor
CDEM	Civil Defence Emergency Management
CURP	Census Usually Resident Population
DOC	Department of Conservation
ESOL	English for Speakers of Other Languages
EQC	Earthquake Commission
HDC	Hurunui District Council
IVA	International Visitor Arrivals
IVS	International Visitors Survey
KDF	Kaikoura District Council
MB	Meshblock
MBIE	Ministry of Business, Innovation and Employment
MDC	Marlborough District Council
MRTE	Monthly Regional Tourism Estimates
MSD	Ministry of Social Development
NCTIR	North Canterbury Transport Infrastructure Recovery
NZTA	New Zealand Transport Agency
RNC	Resilience to Nature's Challenges
RSE	Recognised Seasonal Employer
RTO	Regional Tourism Organisation
SH	State Highway
SH1 (north)	Refers to the section of SH1 to the north of Kaikoura
SH1 (south)	Refers to the section of SH to the south of Kaikoura
TA	Territorial Authority
TDC	Tasman District Council
VFR	Visiting Friends and Relations
WHS	Working Holiday Scheme
WWOOF	Willing Workers on Organic Farms

Introduction

The Kaikoura¹ earthquake in November 2016 highlighted the vulnerability of New Zealand's rural communities to locally-specific hazard events, which generate regional and national scale impacts. Kaikoura was isolated with significant damage to both the east coast road (SH1) and rail corridor, and the Inland Road (Route 70). Sea bed uplift along the coast was significant – affecting marine resources and ocean access for marine operators engaged in tourism and harvesting, and recreational users. While communities closest to the earthquake epicentre (e.g., Kaikoura, Waiau, Rotherham and Cheviot) suffered the most immediate earthquake damage, the damage to the transport network, and the establishment of an alternative transport route between Christchurch and Picton, has significantly impacted on more distant communities (e.g., Murchison, St Arnaud and Blenheim). There was also considerable damage to vineyard infrastructure across the Marlborough region and damage to buildings and infrastructure in rural settlements in Southern Marlborough (e.g., Ward and Seddon).

The aim of this research is to examine and document the response and recovery to the Kaikoura earthquake event from a community perspective, in order to identify community attributes and structures that can help foster greater resilience. Communities include both permanent residents and transient populations. While the research focus is on transient populations (e.g., workers in agriculture, horticulture, seafood and tourism/hospitality, second home owners and tourists) we also recognise that these populations cannot be understood in isolation from the permanent host community. Host communities themselves are not homogenous, as they display considerable variation across demographic and social characteristics (e.g., age distribution, country of origin and length of residence) and also vary considerably in respect of settlement size, population density and economic activity.

Further, as the Kaikoura earthquake showed, the physical geography of a place – particularly its spatial location – has considerable import in respect of its vulnerability to hazards, and the ongoing impacts of hazard effects. The epicentre of the November earthquake (and many of the aftershocks) may have been located in the Kaikoura and Hurunui Districts, but the ripple effect has extended its impacts into a number of communities located in the Tasman and Marlborough Districts. Through social science investigation into the impacts of the Kaikoura earthquake on these rural communities this research will derive lessons and insights that can inform resilience at the national level. The research contributes to the Resilience to Nature's Challenges¹ research programme which,

... will build new knowledge and tools that underpin a broad-spectrum resilience in our unique rural, urban, coastal and Māori communities to natural hazards, including earthquakes, volcanoes, landslides, tsunamis, weather, coastal and rural fire hazards. There is also special emphasis on extreme-risk sites – where multiple hazards combine to threaten community sustainability.

¹ <https://resiliencechallenge.nz/>

Report structure

This scoping report provides background material relevant to the wider research project and takes a broad regional perspective to identify the variety of population groups who, at any given time, may be present in rural communities. We examine extant national and regional population data and identify those population characteristics which are potentially salient in respect of communities' hazard vulnerability, adaptation and resilience. Informal discussions with council and community representatives and onsite observations during a preliminary field visit (to communities located across the wider research area) provided both confirmatory and additional 'local' data. Together, these data provide the rationale for the selection of four case study locations (from within the wider region) for more targeted research.

The report has four sections:

1. Background – provides a broad outline of the impacts and effects of the Kaikoura earthquake and presents a summary of literature relating to rural community resilience.
2. Population groups – this section presents a broad overview of the types of population groups commonly found within rural communities across New Zealand. Transient versus permanent populations are defined, and conceptualisations of 'migrants' examined. The variety of working visas available to 'newcomers' are described along with the implications of visa conditions in respect of transience. The transient 'visitor' population is described.
3. Population data – this section provides national and regional level data relating to the population groups described previously. A broad overview of the study region (and the four districts of interest) is presented, along with an explanation of the availability and limitations of the extant data sources. Each district is described in more detail via data sourced from Statistics New Zealand, the Electoral Commission, the Ministry of Education, and the Ministry of Business, Innovation and Employment.
4. Case study locations – the preliminary fieldwork (scoping trip) methodology is described along with background data describing each district (drawn from council websites) and data describing the earthquake impact and experience (drawn from media reports). These provide context for the scoping trip notes collected during fieldwork. The rationale for the selection of the four case study communities is described.

Background

This section provides introductory background material relating to the earthquake, its impacts, and effects and a brief review of academic literature relating to rural community resilience.

Earthquake impacts and effects

At 12.02am on 14 November 2016 the South Island of New Zealand experienced a magnitude 7.8 (Mw) earthquake. The epicentre was approximately 15kms northeast of Culverden (near the small settlement of Waiau) and 60kms southwest of Kaikoura. The earthquake was the most powerful in the North Canterbury area in over 150 years. The earthquake rupture (movement on the faults) propagated south-west to north-east through the North Canterbury and Marlborough Fault areas, essentially "unzipping" along an approximately 180kms length of the northeast coast of the South Island and lasted nearly two minutes in total. It was one of the most complex earthquakes ever recorded with modern instruments: altogether 21 faults ruptured, and where these met the surface the ground was displaced, horizontally (sideways) and vertically (up-down) by up to 12 metres. The earthquake caused extensive coastal uplift, widespread landslides and landslide dams, as well as slow-slip 'silent' earthquakes². The earthquake triggered the biggest local-source tsunami in New Zealand since 1947, and a tsunami warning was activated along the east coasts of both the North and South Islands, and low-lying coastal suburbs in Wellington and Christchurch were evacuated (Stuff 2016a).

Immediately following the earthquake, State Highway 1 (SH1) between Seddon and Cheviot (via Kaikoura) and the Inland Kaikoura Road were closed, along with the Main North Line railway, effectively cutting off all land routes into Kaikoura. Hanmer Springs was temporarily cut off at the Waiau Ferry Bridge. In the two weeks after the earthquake Kaikoura township experienced infrastructure outages of electricity (8 days), water (5 days) sewerage (11 days) and storm water (11 days) (Market Economics Limited, 2017). Telephone and broadband services were also affected. An update published by Destination Kaikoura on 3 December 2016 reported that 27 residential and three commercial properties in the township were red-stickered, with a further 150 residential and 37 commercial properties yellow-stickered (allowing limited access). Although there were ongoing access issues, 66% of Kaikoura accommodation was 'open for business', along with 53% of activities and attractions and 78% of the retail, food and beverage services (Destination Kaikoura, 2016a). The update published on 10 December reported that water supply and sewerage systems, along with phone and broadband services had been reinstated in the community (Destination Kaikoura, 2016b). The earthquake raised the seabed in the Kaikoura area by more than a metre (Daly, 2016) and restricted access to South Bay Marina, leaving both Whale Watch and Dolphin Encounter Kaikoura unable to access their vessels (Lewis, 2016b; Lewis, 2016d).

The port of Wellington was also extensively damaged (Swinnen, 2016), along with buildings and facilities in the Wellington CBD (Stuff, 2016b). Towns and farms across the upper South Island were also affected, with Waiau, Seddon and Ward particularly badly hit (Market Economics Limited, 2017). Immediately after the earthquake, schools and many Blenheim buildings and sportsgrounds were closed for site inspection (Lewis, 2016a). The closure of SH1 and subsequent increase in traffic volumes on the alternative route have impacted in a variety of ways, both positive and negative, on communities in the Kaikoura, Hurunui, Tasman and

² <http://www.geonet.org.nz/earthquake/story/2016p858000>

Marlborough Districts (Matthews, 2016). More detail of these impacts is provided in the 'Case study locations' section of the report.

The road (and rail) network disruption also impacted nationwide on freight supply lines and transport costs (Market Economics Limited, 2017; Harris, 2017). The road disruption immediately post-earthquake (i.e., the closure of SH1 and the closure/restricted access along the Kaikoura Inland Route) left Fonterra trucks unable to access the 24 dairy farms located in the Kaikoura area, forcing farmers to dump their milk (Dennett, 2016). It was three weeks after the earthquake before the 200,000 litres of milk produced daily in the district could be collected, although access was still dependent on the Inland Road status (Dangerfield, 2016). In the absence of road access along SH1 between Cheviot and Ward (via Kaikoura) the only way north from Christchurch to Blenheim and Picton was via the Lewis Pass – adding 149kms (i.e., via SH1 it was 330kms while the alternative route is 479kms) and considerable time to the journey. This diversion has necessitated roading upgrades along the entire length of the alternative route (which was not designed to carry the volumes and weight of traffic) and had significant impacts on communities located in the Hurunui, Tasman and Marlborough Districts.

In the almost 12 months since the earthquake considerable progress has been made in respect of the reinstatement of the east coast road and rail corridor. SH1 south of Kaikoura reopened on 21 December 2016, albeit with only one lane in places and with its 'open' times impacted by both rebuild and repair schedules and weather conditions. The first train on the Main North Line ran from Christchurch to Blenheim on 15 September 2017, but the line was subsequently closed by heavy rain and slips for 10 days; it then reopened for long enough to allow 14 trains through before another rain-induced closure (Hayward, 2017g). When open, two freight trains were running each week night on the line, leaving it clear at other times to enable ongoing road and further rail repairs. While SH1 north of Kaikoura is expected to 'open' before Christmas 2017, most probably with only one lane operating in places, local residents have expressed concerns about rumours that it would close again shortly after Christmas (Eder, 2017c).

Disruption to the transport network has been the most significant earthquake impact in respect of both its spatial extent and temporal longevity for the many communities affected, although the nature of impact has varied considerably. Cheviot businesses, for example, lost many of the passing customers they had previously welcomed, whereas both Murchison and St Arnaud have experienced high volumes of through traffic and increased business opportunities. Access to Kaikoura continues to be disrupted by road closures to both southern access routes as a result of weather events and ongoing road repairs and rebuild. Almost 12 months after the earthquake there was still no access to Kaikoura from the north. Communities located along SH1 (north), such as Seddon and Ward, have also had drop in through-traffic and demand for highway services, although they are hosting (along with Blenheim and Kaikoura) some of the rebuild worker population. Despite the alternative route being much busier than pre-earthquake, changes in travel timing patterns of travellers driving to and from the interisland ferries have reduced the number of visitors staying overnight in Blenheim (Lewis, 2017a) and impacted on other Blenheim services (Lewis, 2017c). Hayward (2017a) also reported a decline in the number of people stopping at more isolated businesses along the alternative route.

Rural community resilience

Rural community resilience attests to a community's ability to respond to and recover from sudden hazard events such as earthquakes and from change more broadly (e.g., economic, technological, social). This section presents an overview of literature relating to rural community resilience and primarily draws on literature presented in the following four key publications:

- Pomeroy's (2011a; 2011b) analysis of rural community resilience and climate change which contains a substantive review of rural change in New Zealand over the period from 1981 to 2006
- Spector et al.'s (2017) review of resilience in New Zealand, undertaken as part of the Resilience to Nature's Challenges programme
- Pomeroy and Spector both draw extensively on McIntosh et al.'s (2008) Australian review of resilience in rural communities
- Morris's (2015) examination of regional recovery associated with a selection of hazard events in New Zealand.

These four publications examine rurality (including how it is defined), community and resilience and identify a range of factors affecting community resilience. A key theme – in respect of impacting on and, in turn, being impacted by resilience – is rural change. A considerable international research literature has addressed issues associated with rural change. In many countries (including New Zealand) population migration and changes in the labour market have blurred the divide between rural and urban, while there has also been considerable demographic change within the rural population. Our interest in the wider spatial and social/community impacts of the Kaikoura earthquake encompasses a range of communities located within 'rural' New Zealand. Some of these communities, however, are of sufficient size to be classified as urban centres although they act as service centres for – and are economically dependent on – rural industry. As Spector et al. (2017) note, defining rurality is problematic.

Defining rural

Urban and rural geographies are used to define and classify locations according to their environment and population characteristics. However, according to Statistics New Zealand (2015):

While urban and rural geographies have been developed internationally, there isn't a standard urban/rural definition in common use. Instead, definitions reflect the needs of a particular country, although there are some common themes used in definition, such as population size and density. Urban and rural classifications also typically contrast between the built and natural environment (even though this may have been modified for agricultural purposes), and may reflect remoteness and sparsity (p.5).

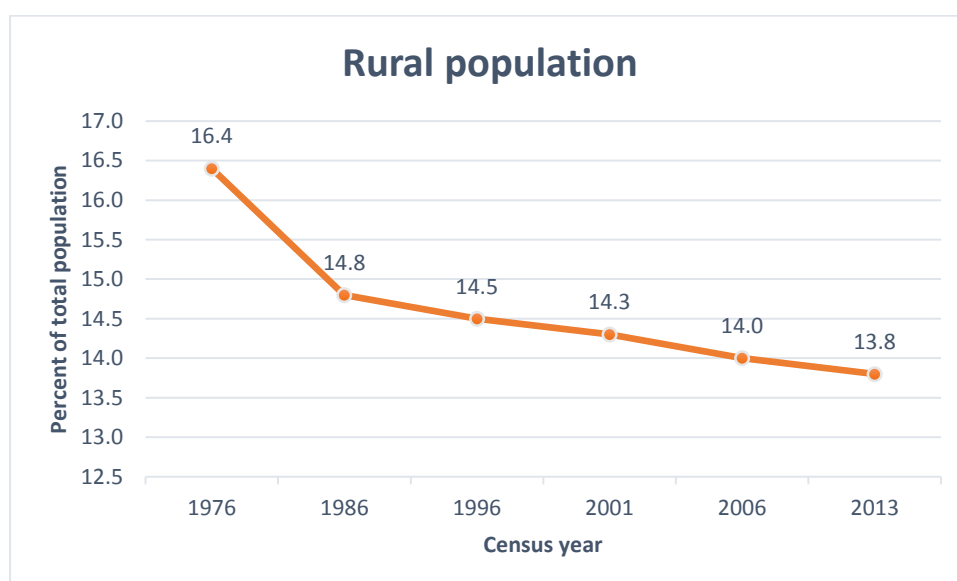
Classification based on the population contained within the Statistics New Zealand area unit boundaries (and concentrations of these) provides a functional, but crude, measure of population geography (see Table 1). In New Zealand, for example, population concentrations of more than 1,000 people are classified as urban areas; rural areas are those which are not specifically designated as 'urban'. Based on this classification, at the 2013 Census only 13.8% of the population was rural, a percentage that has steadily declined over the last four decades

(Figure 1). Within the rural area classification, settlements comprising distinct area units with more than 300 people are identified as rural centres.

Table 1 Urban Areas classification 1989 (Statistics New Zealand)

Rural/urban geography	Population
Main urban areas	30,000 +
Secondary urban areas	10,000 - 29,999
Minor urban areas	1,000 - 9,999
Rural centre	300 - 999
Rural areas	No statistically defined area unit population

Figure 1 Rural population (%) – Census years (1976-2013)



An experimental urban/rural profile classification, designed to counter the tendency to treat rural areas as a residual category of urban areas, was introduced by Statistics New Zealand in 2004. Using workplace location (as the defining variable) compared with address of usual residence as a proxy for both distance from, and the need to travel to, an urban area for employment this classification provided four rural categories³ (Statistics New Zealand, 2015, p.8):

1. Rural area with high urban influence – rural areas that form a transition between main urban areas and rural areas.
2. Rural area with moderate urban influence – rural areas with a significant urban area influence (from either main, satellite or independent urban communities).
3. Rural area with low urban influence – rural areas with a strong rural focus, with the majority of the employed population working in rural areas.
4. Highly rural/remote area – rural areas with minimal dependence on any urban areas.

While unofficial (i.e., it is not the approved classification) this classification has proved useful for distinguishing the characteristics of rural areas according to their degree of rurality and/or remoteness of locality to urban centres and is embedded in some areas of government policy.

³ The classification also contains three urban classes – the criteria for classifying areas into each of the seven classes is based on the proportion of the employed population working in main urban centres (Statistics New Zealand, 2015).

Further refinements to this classification – to address better current area boundaries and reflect or delineate the modern urban/rural continuum – will be introduced in 2018 by Statistics New Zealand.

Perceptions of rurality do not always match the on-the-ground reality. As Pomeroy (2011b) noted, rural communities are often seen as synonymous with farming, and yet only 32% of the working population resident in New Zealand's rural areas in 2006 was engaged in the primary industries. While McIntosh et al. (2008) identified similar rurality definitional issues in the Australian context and acknowledged the diversity of rural communities in Australia (e.g., farming, mining and tourism communities), their study focused on rural communities comprised primarily of people living on farms or in agricultural service centres. In New Zealand there are increasing numbers of rural residents who travel to work in nearby urban areas, but the reverse also occurs with many rural workers now housed in urban areas. These, and other rural changes, are explored further below.

Rural change

Pomeroy (2011a; 2011b) presented a substantive review of rural change based on research undertaken in a number of rural communities around New Zealand. The key changes relevant to the communities of interest in this research are drawn from this review. Pomeroy's review covered the period from 1981 to 2006, although the trends identified have continued in the decade since. These include changes in population demographics, labour force characteristics, and farming and employment in the farm sector and, concomitant to each of these, changes in the rural social dynamic.

The most significant (and ongoing) demographic change has been out-migration by people in the 15-24 years age group and has resulted in a population with heavy over-representation of mature working age adults 40-64 years. There have also been changes in the labour force characteristics, with the industry mix of jobs held by rural residents shifting away from agriculture to other industry sectors and increasing numbers of rural women seeking off-farm employment. The growth of service sector employment, in particular, reflects the increasing significance of tourism in rural areas. Pomeroy (2011a, p.17) suggests that the increasing number of people commuting between rural and urban areas (and urban-rural) for work "impacts on the availability of people to participate in social activities and provide voluntary services in rural areas. This has a direct impact on the building of social capital and resilience." Rural communities have also been subject to a raft of external changes, as Pomeroy (2011b, p.16) notes,

Further changes to rural communities came with withdrawal of central and local government services, stock market collapse, closures and job losses associated with deregulation and state restructuring, technological innovation which contributed to the centralisation of bank branches and other businesses away from the smaller rural communities, and improved roading which enabled people living in rural areas to work and shop in urban centres.

Pomeroy (2011a; 2011b) discuss a number of changes in farming and in farm sector employment across New Zealand with the most significant being a shift away from pastoral to dairy farming (in those areas not limited by water supplies) and the growth in horticulture and viticulture. In some areas large-scale corporate agriculture has taken over from smaller family farms. The switch to dairy farming with its different seasonal and temporal routines, was found

to have changed patterns of community activity and temporary dairy workers (and their families) temporarily overloaded schools at junior level (Pomeroy, 2011b). Since 2006, the continued growth in dairying has brought significant numbers of new migrants to New Zealand, necessitating the establishment of migrant services and migrant assistance in many rural schools. At the 2013 Census, for example, the largely rural Hurunui District had a larger proportion of newcomers than did New Zealand as a whole. The largest proportion of these recent migrants were from Asia, whereas most long-term migrants living in the district were born in the United Kingdom and Ireland (MSD, 2014). In comparison, the increased demand for labour in the viticulture industry (in Marlborough, Tasman and parts of the Hurunui Districts) has been largely met by temporary worker populations, many of whom are from the Pacific Region.

While technological changes in other types of farming reduced demand for workers, and their departure meant inexpensive housing became available for newcomers, this increased social divisions between population groups in the community, with potential for conflict. Pomeroy (2011a) also reports a number of social challenges associated with temporary dairy (and other agricultural) workers and with urban commuters working in rural areas,

... although many rural communities were rejuvenated by people commuting in for work on a daily basis, these people were not around to participate in community and voluntary activities and services. The permanent residents often felt that a 'sense of community' was missing or threatened (p.19).

The rural changes described above occurred across multiple parameters and challenge the tendency to conceptualise rural communities as relatively homogenous entities. Such issues also raise the question of what is meant by community.

Community

McIntosh et al. (2008) make a distinction between communities of location – as limited by propinquity – and communities of interest, thus reinforcing the importance of the spatial boundaries within which rural communities are contained. In many communities, land (or property) ownership is perceived to give people the right to 'community'. In some cases, this can have positive impacts such as when holiday home owners make meaningful contributions to community life and community decision making, as Wilson and Mackay (2015) reported in Otematata. In others there may be some resentment against holiday home owners and their perceived rights as 'residents', as found in Akaroa by Wilson et al. (2015). Schools often provide a social focal point for rural communities in New Zealand (Pomeroy, 2011b), although many people in the community may have little or nothing to do with the school in its educational capacity.

However, Pomeroy (2011b, p.3) also writes of the complexity of the concept which includes notions such as 'common organisation' and 'set of relationships' and 'a sense of common identity and characteristics'. This latter characteristic, in particular, can be challenged by new arrivals and/or changes in the population and is one of the common factors contributing to the weakening of a community's resilience suggested by Pomeroy (2011b):

- lack of economic diversity (e.g. dependence on one or two key industries or firms)
- poor social connectedness between communities (e.g. population influx to an area without accompanying social connectedness)

- difficulties adjusting to changes in labour needs and structures (increased worker mobility, more casual employment, more transient population, fewer people available for key volunteer work)
- a population size too small to sustain necessary infrastructures.
- loss of leadership (e.g. business closures and demographic changes that lead to a loss of people with experience in governance and management skills)
- shift in location of community decision-making and loss of local 'ownership' (of ideas and actions) without processes being put in place to maintain dialogue and connections (p.80).

These negative dimensions highlight many of the demographic, employment and social changes noted previously, and reinforce their potentially negative influence on the structure and strength of the community in respect of its resilience. As Pomeroy (2011b) points out these negatives are closely aligned to the positive resilience factors that have been identified both through her research and that of McIntosh et al. (2008).

Resilience

Although many rural communities continue to face the internal demographic and social challenges noted above, the focus in recent years has shifted to understanding community resilience in the face of external challenges, particularly those associated with hazard or disaster events of a physical nature. A distinction is commonly made between slow onset (e.g., drought, climate change) and sudden impact (e.g., cyclone, earthquake, tsunami) hazards. More generally, the United Nations (2009) describe 'resilience' and 'hazards' as:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions (p.24).

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (p.17).

Spector et al.'s (2017) review examined articles addressing the resilience of rural communities in New Zealand to hazards, Pomeroy's (2011a; 2011b) focus was on resilience in the face of climate change, whereas McIntosh et al. (2008) took a broader approach to understanding resilience. McIntosh et al. (2008, p.4) note that, in addition to having the ability to 'bounce back' after experiencing an adverse event, resilience is "also about anticipating change and having policies and programs in place that make positive rather than negative outcomes achievable." Pomeroy (2011b, p.63) suggests that resilience requires integrated approaches which "simultaneously take account of the social, cultural, economic and environmental dimensions of the entire system." McIntosh et al. (2008) based their research on the premise that resilience in rural communities can be assessed in relation to levels of various stocks of available capital:

Commonly, four sorts of capital are differentiated: (1) human capital (incorporating the knowledge, skills and health status of the population); (2) social capital (including attachment to and trust in social groups and associations); (3) produced capital (to be seen in such things as the money, machinery and infrastructure which help the economy and society to function); and (4) natural capital (as evidenced primarily in the condition of the biophysical environment) (p.7).

McIntosh et al. (2008) also note the existence of a fifth – institutional – capital, relating to the public and private sector and also not-for-profit organisations and institutions. Importantly, McIntosh et al. (2008) include transient or itinerant populations, such as part-time specialists and seasonal fruit pickers and farm workers, as well as local residents in the human capital stock. Further, the amount and stability of human capital that can be found in a location is influenced by population levels.

Social capital concerns the way the people interact and relate and, as McIntosh et al. (2008) point out, contains elements such as networks, social participation and community engagement. The importance of the social domain, including social connectedness, inclusive consensual approaches to decision making and holistic approaches to issue resolution, is reinforced by Pomeroy (2011b). Both McIntosh et al. (2008) and Pomeroy (2011b) describe a variety of forms of social capital, including bonding capital (e.g., between kin groups), bridging capital (e.g., between diverse groups) and linking capital (e.g., between community members and people in power). As Pomeroy (2011b) notes, bridging capital can be especially important in rural communities which contain groupings of people with diverse values, outlooks and roles. According to McIntosh et al. (2008, p.22) there are two main sources of bridging capital: “existing migrant communities who extend a bridge to new emerging migrant communities, or institutional sources provided largely by government.”

Pomeroy (2011b) reports on an Australian study which identified a number of facets important in respect of rural community resilience: social networks and support; positive outlook; learning; early experience; environment and lifestyle; infrastructure and support services; sense of purpose; diverse and innovative economy; embracing differences; beliefs; and, leadership. While these resilience facets mesh well with the capital domains identified by McIntosh et al. (2008), their universal applicability is challenged by the idiosyncratic nature of both communities and hazard events (and their impact). Spector et al. (2017) reported that there were spatial and temporal differences in the ways rural communities are able to respond to hazard events. The salience of impacts, for example, can vary spatially across different community members, while threats may vary temporally, from physical (in the immediate aftermath) to economic (over time). Spector et al. (2017) also note variations in community characteristics – such as place attachment and community ties – which enhance resilience.

Pomeroy (2011b) separates resilience into personal, community, and institutional types, while Spector et al. (2017) also identify factors affecting ‘organisational’ resilience. For organisations (i.e., businesses), post-disaster revenue is closely related to the speed at which utilities are repaired. Factors such as having effective communication lines and relationships with stakeholders, being able to manage risk along entire supply chains, and having well-trained staff impact on organisational resilience more generally (Spector et al., 2017). Staff trained to respond to disasters in rural areas with high numbers of visitors (who may not know correct procedures) were found to be of particular importance in one study reviewed by Spector et al. (2017).

One section of Pomeroy’s (2011b) review deals explicitly with resilience in relation to Maori, and reports variations, from perceptions that “indigenous knowledge is often not respected or is overlooked, and that Maori ways of knowing have been denied” (p.68), to noting that “traditional Maori social and cultural structures and values seem to provide an inbuilt base which supports community resilience” (p.71). Pomeroy (2011b, p.77) goes on to note that Maori

writers in general, along with some other resilience studies, “place most emphasis on factors of people-place connections, on inbuilt structures for social connectedness, and embracing diversity and innovation.”

In conclusion to her review Pomeroy presents eight domains of community resilience developed by Paton, which she notes are already being used in New Zealand in the civil defence and emergency management context. These include: critical awareness; action coping, outcome expectance; self-efficacy or self-confidence; community participation; articulating problems/solutions and demonstrating leadership; empowerment; and, trust (Pomeroy, 2011b, p77). Her study of rural community resilience and climate change was framed according to these eight domains.

Another New Zealand study examined community responses to a selection of flooding and earthquake events to develop a practical guide for *Learning from Regional Recovery Events* (Morris, 2015). The 2013 Seddon earthquake was one of the earthquake events studied. Although focused on ‘recovery’ and designed for Territorial Authorities (TA) and Local Recovery Managers (i.e., it was ‘top-down’) the study identified a number of community factors that can influence resilience. Morris (2015) postulated that resilience provides a link between reduction and recovery and outlined the most common issues for communities during recovery:

- Grief and psychosocial impacts on people over time
- Restoration of road transport links is the key recovery priority
- Economic impacts, due primarily to loss of transport links and production losses, business closures, loss of tourism and public concern about potential loss of property values
- The need for communication of information about the event, what is being done, who to contact for help and the options available to recover from the event
- Community desire for face-to face contact with TA Councillors and staff
- The dichotomy of dealing with both affected and unaffected people in communities (p.12).

Morris went on to suggest a number of actions that can be undertaken both before, and after, hazard events which can build resilience. According to Morris (2015) it is possible to build resilience:

Prior to events by:

- Improving understanding of local hazards, risks and vulnerabilities as a part of ongoing Council/CDEM group work programmes
- Working with lifelines utilities to identify and manage risks such as critical power supplies, and confirm capability and vulnerability of lifelines utilities
- Encouraging ongoing reduction activities such as maintenance of Council assets (particularly roads) and building strengthening.

Following events by:

- Encourage land use change where possible to reduce future risks
- Ensure that planning provisions and future development standards are adequate, and are locked in for the future (p.24).

In addition, Morris noted the importance of community involvement during recovery and, in particular, the importance of seeking out local champions and influencers, in order to use their knowledge and networks. Morris (2015) also reported that public information messaging during events should be ‘down-to earth, especially for rural communities’ (p.17) and that in hazard

event recovery, managers need to “understand community dynamics, relationships and how the communities were coping” (p.20). Morris’s (2015) studies also drew attention to the idiosyncratic nature of hazard events, the impacts ensuing, and the nature of the communities affected:

... impacts to communities and the approach to recovery is largely governed by the type of event, the size and scale of damage and the demographics of the communities impacted. Therefore, recovery must be customised to the specific local circumstances of the event (p.12).

While recovery focused, Morris’s (2015) summary also applies in respect of resilience and supports a case study approach to rural resilience research which includes a variety of community types and hazard event impacts.

Hazard events themselves trigger population movements and can generate new population groups. The Hurunui District, for example, experienced in-migration as a result of the Christchurch earthquakes: some of these urban earthquake-migrants were temporarily escaping the earthquake-affected city, others had lost their homes and were making a permanent move to surrounding rural areas. The Kaikoura earthquake response, recovery and ongoing rebuild has also generated new temporary/transient populations in all four districts of interest in this research. Stocks of accommodation in earthquake-affected communities (i.e., part of its ‘produced capital’) are subject to competing demands from of displaced residents, earthquake-rebuild populations and visitors, as occurred in Christchurch post-earthquake (see Wilson, 2016).

Despite reference to the diverse populations found within many rural communities to some extent the resilience literature assumes a homogenous population in rural areas and rural population centres. While historically this may have been the case in rural New Zealand, as noted there have been significant demographic and population changes over the past three decades. Many of these changes are associated with changes in agriculture production, with the spread of dairying and growth of horticulture and viticulture bringing new migrants and temporary worker populations, often from overseas. While the growth of tourism New Zealand-wide has offered new business opportunities and employment options to the resident rural population there is also increasing reliance on more transient seasonal staff from within the international visitor population, such as those on working holiday visas. The integration of these new migrants and transient population groups has been identified as challenge in respect of a community’s social capital. Social capital, as noted, is an important facet of community resilience to hazard events.

The next section of this report looks in more detail at the population groups which are found in rural New Zealand.

Population groups

This section examines the different population groups that are commonly found within rural communities with a focus on transient, rather than permanent, populations. The regulations pertaining to working visas and residency are described along with the range of transient visitor groups. A 'population transience continuum' is proposed in which these population groups are classified according to key demographic and social characteristics, and the extent to which they are integrated within the rural community.

Transient versus permanent

Transient populations include all people who are not permanent residents in a location, although by necessity such a classification also requires a definition of what qualifies as being permanent. The Electoral Commission and Statistics New Zealand provide two measures of permanence: the first in relation to eligibility to vote in New Zealand elections (see Box 1); the second in relation to the 'usually resident' population question asked on the Census of Population and Dwellings (see Box 2).

Box 1 Electoral Commission – voting eligibility rules

You are qualified to enrol and vote if:

- you are 18 years or older AND
- you are a New Zealand citizen or permanent resident AND
- you have lived in New Zealand for one year or more continuously at some point.

For the purposes of registering as an elector, a **permanent resident** is someone who is entitled to live indefinitely in New Zealand. If you have to leave New Zealand by a set date you are not a permanent resident for electoral purposes and you are NOT eligible to enrol and vote. This includes people who have student, work or visitor permits.

<http://www.elections.org.nz/voters/enrol-check-or-update-now/who-can-and-cant-enrol>

Box 2 Statistics New Zealand – 2013 Census residence questions

Q5 Where do you usually live?

If you are an overseas resident and will be staying in New Zealand for less than 12 months, give your address in your home country.

Q6 How long have you lived at the address you gave in question 5?

Q7 Where did you usually live 5 years ago, on 5 March 2008?

- not born 5 years ago
- at the address I gave in question 5
- in New Zealand at another address
- NOT living in New Zealand.

<http://www.stats.govt.nz/Census/2013-census/info-about-the-census/forms-guidenotes.aspx>

Based on these measures, permanent residence applies in respect of a person who is either entitled to live indefinitely in New Zealand, or a person who will be staying in New Zealand for 12 months or longer. The five-yearly census captures all persons present in New Zealand on

census night and, as Box 2 shows, these data are defined further according to measures of permanence/transience and migration characteristics.

Migrants

Migration is defined as the ‘movement of people’, with a migrant described as being “a person that travels to a different country or place, often in order to find work”⁴. Such a broad definition suggests temporary (and ongoing) movement by people who have simply moved from somewhere else, whereas in common usage ‘migrant’ describes someone from overseas who has moved to New Zealand to live, rather than internal population movements. Having no clearly defined or universal definition of ‘migrant’ presents complications in respect of data sets, presents policy challenges and often conflates issues of immigration, race/ethnicity, and asylum in public debate (The Migration Observatory, 2017). Statistics New Zealand generally refers to migrants as those moving permanently to New Zealand, although migration statistics capture both long- and short-term arrivals (and departures). ‘Short-term’ is defined as less than 12 months and includes the majority of tourism visitors (including working holidaymakers) and people visiting friends and family (VFR), in addition to business and convention travellers and some students.

New arrivals to a particular region or district are variously described as being either migrants or ‘newcomers’, often with limited additional differentiation between their origins and/or immigration status, and intended permanence. Many newcomers to an area, for example, might be New Zealand Citizens and New Zealand Permanent Residents and, when considering all migrants, there are considerable variations in the length of time they plan to (or are permitted to) stay. Census data capture some detail as to a person’s location five years previously (see Box 2) and re-classifies those who are away from their usual residence on census night, but nothing is known about why, or for how long, they are away from home. Likewise, there are also several categories of international visitors who could, according to the measure in Box 2, could be classified as ‘permanent’. Some international visitors gaining entry via the Working Holiday Scheme (WHS), for example, can stay more than 12 months in New Zealand and some temporary work visas are either valid (or renewable) for more than 12 months. Holders of extended work visas, however, would not be eligible to vote (Box 1). Another consideration for those resident in New Zealand for extended (but still temporary) periods is that they are not eligible for publicly funded health services (Box 3).

Box 3 Ministry of Health – eligibility for publicly funded health services

<p>(Eligible) if have a work visas that:</p> <ul style="list-style-type: none">• entitles you to remain in New Zealand for a period that equals or exceeds two years (work visas start on the person’s first day in New Zealand) OR• entitles you to remain in New Zealand for a specified period of time which, together with the period of time you have already been lawfully in New Zealand (i.e., on other visas/permits), allows for a total continuous stay of at least two years. <p>All people eligible for ACC</p> <p>http://www.health.govt.nz/new-zealand-health-system/eligibility-publicly-funded-health-services/guide-eligibility-publicly-funded-health-services</p>
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⁴ <https://dictionary.cambridge.org/us/dictionary/english/migrant>

Working visas

A variety of types of working visas are available to people from overseas who want to work in New Zealand, with some permitting temporary work only and others providing a pathway to permanent residence. The main visa types and the permit rules and conditions (current September 2017) are described in more detail below.

Essential Skills Work Visas

Holders of Essential Skills Work visas are permitted to work subject to the following conditions:

- Work for up to five years depending on skill level
- May work only in the specific occupation, for the employer and in the location specified on the visa
- Some work visas allow partners (e.g., *Partner of a Worker Work Visa*)

Essential skills work visas are intended to fill temporary skill gaps, so they do not lead directly to a residence application. However, if someone has an Essential Skills work visa based on a skilled job, they may qualify for a residence visa under the Skilled Migrant Category (see below).

South Island Contribution Work Visa

This work visa is for people who hold an Essential Skills Work Visa and have been employed in the South Island for five years or more. This visa provides a pathway to residence if they remain employed in the same industry and region.

Work to Residence Visas

There are two main types of Work to Residence visa which enable people to work in New Zealand and then, after working in the job for at least 24 months, apply for a resident visa.

1. If they have a permanent or long-term job offer in an occupation on the Long Term Skill Shortage List (Box 4) and their qualifications and experience match
2. If they have a long-term or permanent job offer from an Immigration New Zealand accredited employer, they could apply for a work to residence visa.

Box 4 Skill shortage lists

The Long Term Skill Shortage List (LTSSL) identifies occupations where there is a sustained and on-going shortage of highly skilled workers both globally and throughout New Zealand.

If you get a job in an occupation on the LTSSL and meet the list requirements, you may be granted a Work to Residence visa under the Long Term Skill Shortage List work visa. This means that you may be eligible to apply for residence in two years, provided you meet standard requirements and that job has a base salary of at least NZ\$45,000.

The Immediate Skill Shortage List (ISSL) includes occupations where skilled workers are immediately required in New Zealand and indicates that there are no New Zealand citizens or residents available to take up the position. This enables faster processing of the application.

If you are offered a job on the ISSL and meet the list requirements you may be granted an Essential Skills work visa. This means that you are permitted to work in New Zealand temporarily. You won't necessarily be able to apply for residence.

The Canterbury Skill Shortage List (CSSL) contains occupations in critical shortage in the Canterbury region following the 2010 and 2011 earthquakes. It draws on the occupations on the Immediate and Long Term Skill Shortage Lists (LTSSL) relevant to the Canterbury rebuild.

If your skills appear on the CSSL and you have a job offer in Canterbury, you may be granted an Essential Skills work visa. If the occupation is also on the LTSSL, then you may also be able to apply for residence.

http://skillshortages.immigration.govt.nz/?_ga=2.221901464.1255892704.1504143320-1583305474.1503872788

Skilled Migrant Category

It is possible to apply directly for a residence visa via the Skilled Migrant Category. This utilises a points-based system which takes account of the applicant's age, work experience, qualifications and offers of skilled employment. Applicants must be aged 55 or under, and meet English language, health, and character requirements.

Recognised Seasonal Employers (RSE) Scheme

The RSE scheme was established to assist employers overcome significant staff shortages in the horticulture and viticulture sectors. In 2016, there were 10,500 places available to applicants from eligible countries (Box 5).

Box 5 Recognised Seasonal Employers (RSE) Scheme

There is an administrative limit or cap on the number of RSE places that can be taken up in any one year. This cap was set at 5,000 places when the scheme was established in 2007, but the success of RSE has led to increased demand from employers and the cap has been increased over time (8,000 places in 2009; 9,000 in November 2014; 9,500 in December 2015; 10,500 in December 2016). Unless employers can show they have pre-established relationships with workers from other countries, they may only recruit workers under RSE policy from the following eligible Pacific countries:

Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

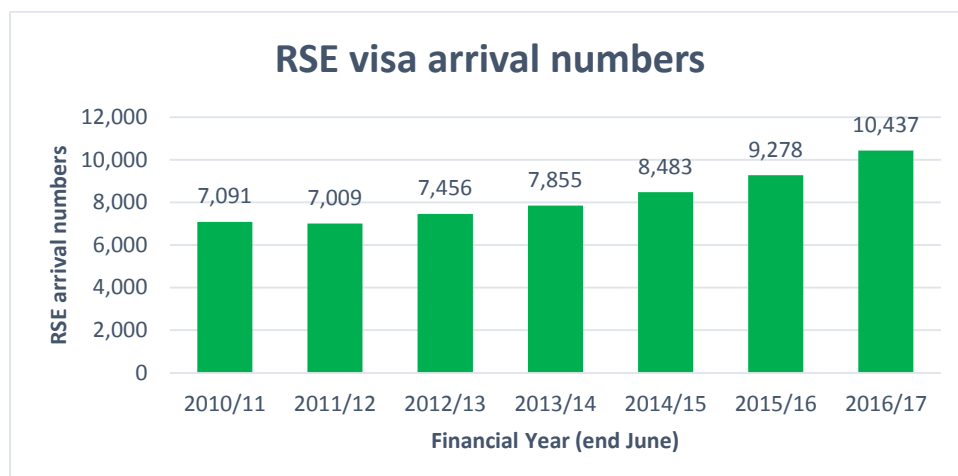
Workers must meet health and character requirements and provide evidence of arrangements to leave New Zealand at the end of their stay.

People employed under the RSE policy may stay in New Zealand for up to seven months during any 11-month period. Exceptions to this are workers from Tuvalu and Kiribati, who can stay for nine months because of the distance from New Zealand and the cost of travel.

<https://www.immigration.govt.nz/about-us/research-and-statistics/research-reports/recognised-seasonal-employer-rse-scheme>

Figure 2 shows the number of RSE visa arrivals from 2011 to 2017 (Year end June). In 2016 there were 123 officially approved RSE employers. Altogether, 92 of these employers (75%) completed the annual RSE survey (MBIE, 2016) and, of these, 16% were located in the Marlborough Region and 25% were located in the Nelson (and Tasman) Region. Only 4% were located in the Canterbury Region.

Figure 2 RSE visa arrivals – national data (Year ended June 2011 – 2017)



Data source: <https://www.immigration.govt.nz/documents/statistics/recognised-seasonal-employers-factsheet-pdf.pdf>

Since its establishment the RSE scheme has been subject to a programme of regular review and research, driven primarily by the desire to maximise the benefits of the scheme for both employers and employees. There is a high return rate of RSE workers: in 2016, for example, roughly 60% of the RSE employers surveyed reported that 80% or more of their Pacific workers had worked for them in the previous season (MBIE, 2016). Overall, managing the provision of pastoral care is easier as a result of returning workers being more familiar with the area, community or culture. In some locations dedicated Pastoral Care Managers have been appointed. As one employer reported:

Our returning RSE employees settle into our harvest team, renew friendships with our local employees, and already know the town, services and our community. They require a lower level of pastoral care as they are comfortable and familiar with the environment (MBIE, 2016, p.58).

In addition to RSE workers, employers registered for this scheme may also employ workers from the local community, Work & Income referrals, Working Holiday Schemes (WHS) and Other Schemes (TRSE, SSE & VOC)⁵. MBIE (2016) report a number of issues in respect of the employment of some of these worker groups. These include: difficulties associated with employing of a mix of nationalities; WHS workers not always staying out the season and being generally less reliable than RSE workers; the difficulty of getting New Zealanders to work in remote areas; and, transport issues associated with attracting some types of employees.

Working Holiday Schemes (WHS)

New Zealand has working holiday scheme agreements with 44 countries. These WHS visas are available to young people aged 18-30 years (18-35 years in a select few countries). WHS visas allow holders to travel and work in New Zealand for up to 12 months (23 months if they are from the UK or Canada). Requirements include a return ticket, or enough money to pay for one, and having holiday as one's primary purpose, with work being a secondary intention⁶.

⁵ TRSE: Transition to Recognised Seasonal Employer; SSE: Supplementary Seasonal Employment; VOC: Variation of Conditions on a temporary work visa

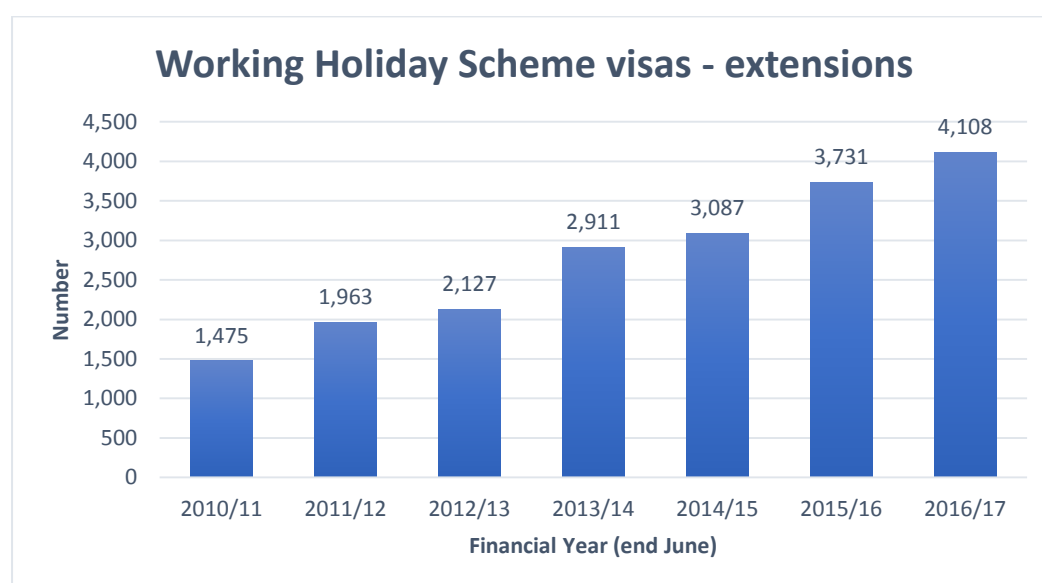
⁶ <https://www.immigration.govt.nz/new-zealand-visas/options/work/thinking-about-coming-to-new-zealand-to-work/working-holiday-visa>

Holders of WHS visas are not able to bring children with them and if partners wish to accompany them they must have their own visa. There are quotas for each country. While they are able to work in any employment they are not permitted to work for more than 12 months in total; WHS visa holders from some countries are also restricted to either a three- or six-month maximum time spent with any one employer. In addition, no permanent jobs are permissible, and work must be legal.

In the 2015/16 year there were 69,051 WHS visas approved, with more than half (55%) of these issued to citizens of three countries: Germany ($n=14,978$, 22%), the UK ($n=13,161$, 19%) and France ($n=9,543$, 14%). No data are available which shows what type of work these WHS visa holders are undertaking while in New Zealand although anecdotally most are reported to work in either the hospitality or agriculture (including horticulture and viticulture) industries. Some WHS visa holders take on unpaid employment (e.g., WWOOFING⁷) and volunteer work whilst in New Zealand.

People who are already in New Zealand on a WHS visa are able to make a one-off application to stay an extra three months if they have completed seasonal work in the horticulture or viticulture industries. Seasonal work can include planting, maintaining, harvesting or packing crops. It is not necessary to have a job offer to apply. Figure 3 shows the number of these extensions granted since 2011. The 3,731 extensions granted in the 2015/16 year represent 5.4% of the WHS visas issued that that year.

Figure 3 Working Holiday Scheme visas – extensions granted (Year ended June 2011 - 2017)



Data source: <https://www.immigration.govt.nz/about-us/research-and-statistics/statistics>

⁷ Willing Workers on Organic Farms. 'Although hosts consider WWOOFers to be volunteering, the Immigration Dept says that if "gain or reward" (ie food, accommodation) is received while volunteering then they consider volunteering to be work. This means, if you say that you are coming to "volunteer or work on a farm" the immigration department in New Zealand require people to hold an open work visa such as a Working Holiday Visa (WHV) if they will receive food, accommodation while volunteering' (<https://www.woof.nz/faqs/>) .

Working visa data

Figure 4 shows the total number of work visas issued from 2011 to 2017 (Year end June). These data include the work visa categories described above, as well as those work visas issued under a variety of other visas categories such as Relationship, Crew, Investor, Humanitarian etc. The data in Figures 4, 5, 6, 7 and 8 were sourced from <https://www.immigration.govt.nz/about-us/research-and-statistics/statistics>.

Figure 4 Work visas issued – national data (Year ended June 2011 – 2017)



While the working visa data are also reported by region, the categories used are not always consistent and it is unclear as to how the data have been aggregated. For example:

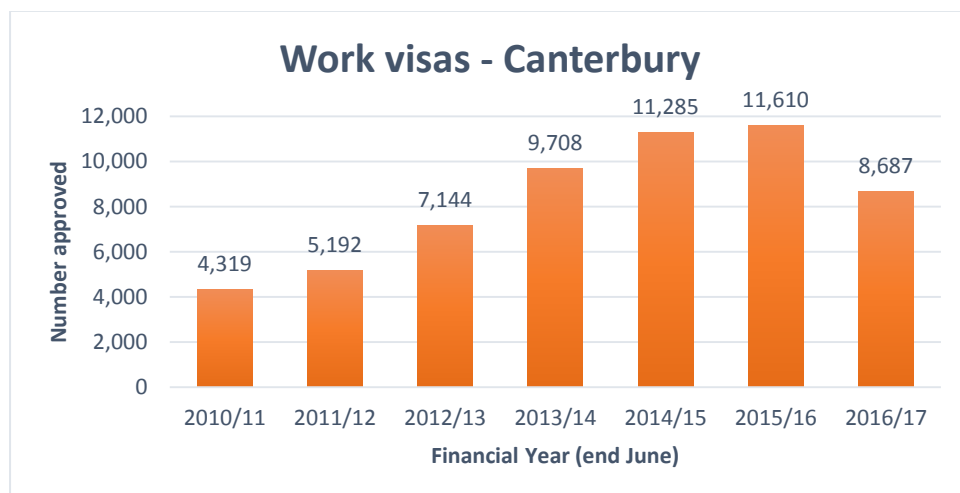
- The data showing region of employment for those approved under skilled migrant category matches that relating to all types of work visas.
- The regional categories by which these data are reported are somewhat unclear. They do not, for example, include the Tasman Region, although the Nelson Region is listed (and presumably includes Tasman).
- There are also some smaller centres/locations listed with data although these numbers are small – the ones relevant to this research area are Blenheim ($n=4$), Christchurch ($n=166$), Hanmer Springs ($n=2$) and Kaikoura ($n=1$). It is unclear as to whether these numbers are part of, or additional to the numbers reported for the broader regions.
- Overall, the regional data set is somewhat incomplete with a lot of 'unknown' regions recorded for each year.

Work visa and resident visa data relating to the Canterbury (which contains Hurunui and Kaikoura) and Marlborough regions are shown in Figures 5 and 7. Data relating to Tasman is not shown for the reason noted above, and also because only a very small part of Tasman is included in the research area.

Figure 5 shows the number of work visas issued for the Canterbury Region. Much of the increase between 2013 and 2016 is attributable to employment associated with the Canterbury earthquake rebuild. As noted in Box 4, a special 'Canterbury Skill Shortage List' contains occupations in critical shortage in the Canterbury region following the 2010 and 2011

earthquakes. 'Opportunity Canterbury' was also put in place to facilitate employment in Canterbury post-earthquake (see Box 6).

Figure 5 Work visas issued – Canterbury (Year ended June 2011 – 2017)



Box 6 Opportunity Canterbury

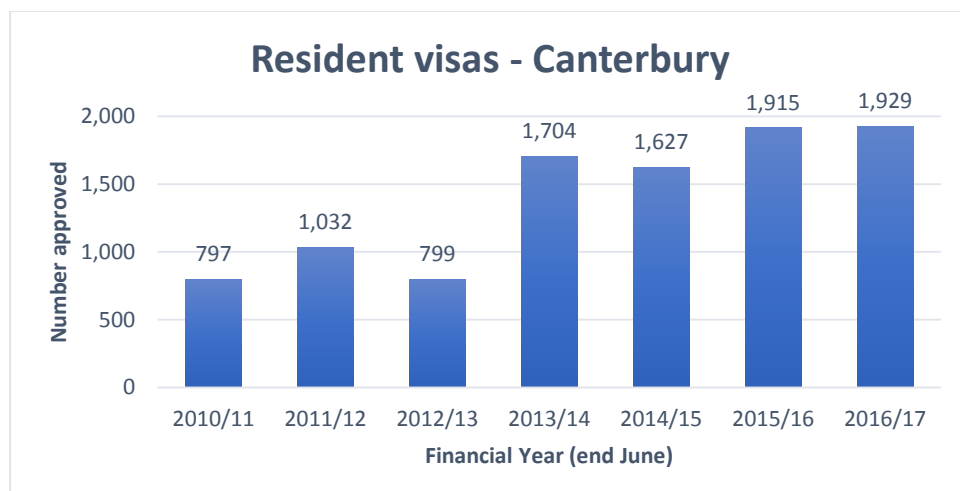
Opportunity Canterbury

The Skills and Employment Hub is a joint initiative by the Ministry of Business, Innovation and Employment and the Ministry of Social Development. The initiative is to meet the anticipated high demand for labour as the rebuild programme expands and as the wider Canterbury economy recovers.

<http://www.opportunitycanterbury.org.nz/about-us/>

Figure 6 shows the number of resident visas issued for the Canterbury Region and also shows a sharp increase in the 2013/14 year.

Figure 6 Resident visas issued – Canterbury (Year ended June 2011 – 2017)



Marlborough data show a more restrained, but still steady, increase in the number of work visas issued (Figure 7). The number of resident visas issued for the Marlborough Region has been

much more variable (see Figure 8) with a significant drop in the 2012/13 year followed by an increase the following year and then some flattening out in subsequent years.

Figure 7 Work visas issued – Marlborough (Year ended June 2011 – 2017)

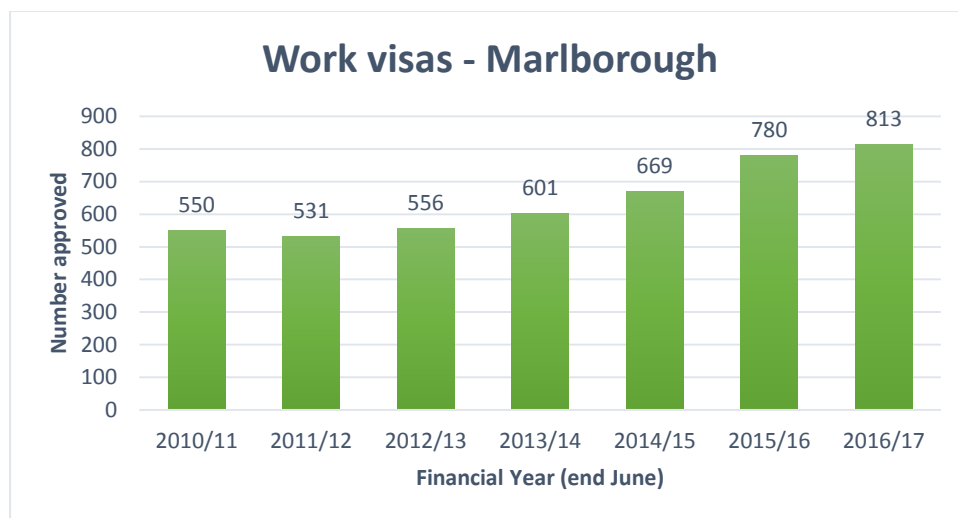
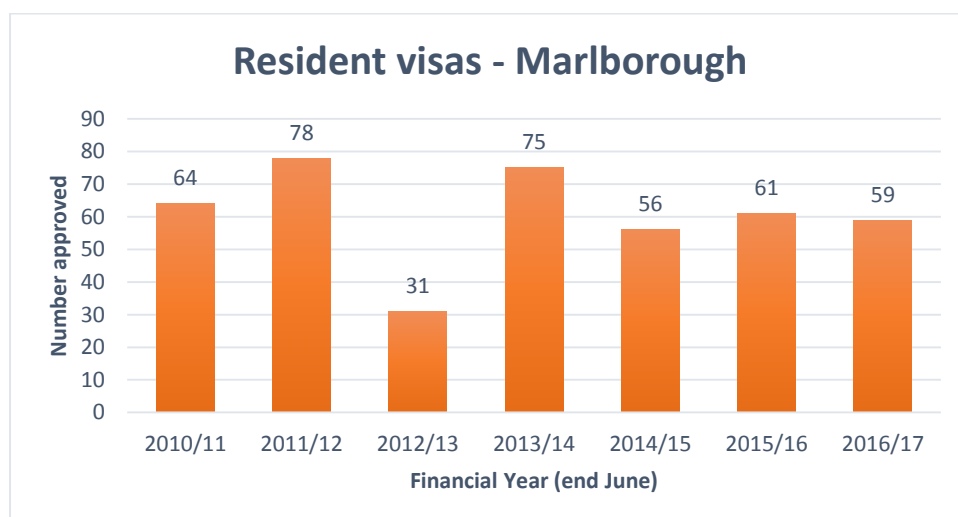


Figure 8 Resident visas issued – Marlborough (Year ended June 2011 – 2017)



Nationwide, the Citizens Advice Bureau (CAB) hold information sessions for new migrants. Those located closest to, and applicable in respect of, the areas covered by this research are those offered in Rangiora (Canterbury) and Blenheim (Marlborough). A range of topics are addressed in these session:

- North Canterbury (in Rangiora) included Civil Defence Information, driving in New Zealand, health services
- Marlborough (in Blenheim) included fishing rights, managing money, pathway to citizenship, employment rights, finding a home

In addition to the above services, a Marlborough Migrant Centre⁸ has been established in Blenheim and a variety of informal migrant services/assistance packages are offered through

⁸ <http://www.migrantcentre.org.nz/>

district schools (e.g., ESOL⁹ teacher support) and community groups (e.g., Rural Women). Migrant assistance is provided in the Nelson/Tasman area by the Nelson Multicultural Council¹⁰. From 2003 the Ministry of Social Development (MSD) operated community 'Settling In' programmes for refugees and migrants in selected locations, but these have now been replaced by community-run initiatives such as the New Zealand Newcomers Network¹¹. This network of groups welcoming newcomers (both from overseas and other parts of New Zealand) operates in every region, but not all settlements have groups. Blenheim is the only one of the research locations with Newcomers group, although there is a Tasman group in Motueka and a North Canterbury group in Rangiora.

Transients

Visitors are the most transient of all population groups by virtue of being only temporarily present in a community although, as noted, 'temporary' potentially includes a presence in the community of up to 12 months (and sometimes longer). The purpose for visiting a particular location might be associated with a wide range of activity including: property ownership (e.g., second home owners); participation in leisure and sporting activities; tourism; employment; working holiday and volunteer activity; travel/transiting to elsewhere; and education. Specific examples of these transient populations, according to four broad purpose of visit categories, include:

- Employment: construction and repair work (e.g., community, business and farm infrastructure); temporary agricultural employment (specialists, labourers); travelling company reps/salespersons; road construction, maintenance and repairs; earthquake-related employment (e.g., engineering and insurance assessors, consultants, labour); central governmental services and representation
- Leisure: domestic and international holidaymakers, second home visitors, day trippers and recreationists, spectators associated with sporting events, event and festival goers
- Others – second home owners, international students, student exchanges, school field/study trips, participants in sporting events, community events and festivals
- Transiting (people passing through a location rather than those who have an express purpose for visiting that location): workers ('truckies', courier drivers, sales reps, etc); domestic and international holidaymakers; other travellers.

However, as noted, a number of transient groups potentially fit into several of the above categories depending on the nature of their involvement associated with that visit purpose. Data describing these populations is limited and, even when available, does not differentiate according to purpose of visit or length of stay. Data sources capturing broad visitor populations and their movements include:

- Commercial accommodation monitor (MBIE) – captures those people staying in commercial accommodation but not all types of premises need to report their data, does not report purpose of visit, does not capture those staying in informal

⁹ English for Speakers of Other Languages

¹⁰ <http://www.nelsonmulticultural.co.nz/community-services/>

¹¹ <http://www.newcomers.co.nz/>

accommodation (e.g., holiday homes, AirBnB etc), those visiting friends or relatives (VFR) or tourists who are freedom camping

- Road count data (Transit New Zealand) – these data record the number of vehicles passing specific monitoring points located along the State Highway network. Data are differentiated according to vehicle type (heavy and light vehicles) but no further purpose of travel is known. There are also variations in the type of monitoring sites (e.g., telemetry sites, weigh-in-motion sites) and in the frequency of the monitoring undertaken
- School roll data (Ministry of Education) – data are reported by individual school and includes a breakdown by student ethnicity, one category of which is the number of international fee-paying students.

In addition to these broad data sets (which, as noted, do not differentiate between visitors' purpose or according to their degree of transience) there are some tourism datasets which describe the travel patterns and spending of both international visitors to New Zealand and (to a lesser extent) domestic tourists. These are examined in the 'Population data' section of the report.

Population transience continuum

This section provided an outline of the population groups one might expect to find in situ at any given time at a location. In addition to the usually resident population there may be both international visitors and New Zealanders away from their usual residence for both leisure and employment reasons. On any given night, for example, (small) rural centres may host workers engaged in delivery services, commercial services and a variety of construction and other maintenance services. The earthquakes themselves created a specific service sector which included representatives from the insurance industry, local and central government, engineering and geotechnical specialists, and building and construction workers. The Hurunui District (and Kaikoura) housed Christchurch homeowners displaced from the earlier Canterbury earthquakes for some months.

These population groups can be represented on a temporal continuum containing four broad classes of residence: permanent, semi-permanent, temporary and transient (see Table 2). The classes shown in Table 2 can generally be differentiated by the length of residence (or stay in the case of more transient population groups) although some population groups feature across several of the classes. For example, while most WHS visa holders would be classed as temporary residents there are some who are able to stay, and work, in one location for more than six months (making them semi-permanent residents).

In the case of permanent residents an 'intention to remain' and 'attachment' criteria are used instead of a defined length of residence as this class may contain long-term residents, Maori with *turangawaewae*¹² connection and newcomers (e.g. migrants from other parts of New Zealand and from overseas) (Table 2). With the exception of the mobile New Zealand workforce and visiting WHS visa holders there are actually few truly transient worker populations. The most temporary of work visa holders are those employed on the RSE scheme and earthquake

¹² Domicile, standing, place where one has the right to stand - place where one has rights of residence and belonging through kinship and *whakapapa* (<http://maoridictionary.co.nz>)

Table 2 Population transience continuum

	Permanent residents	Semi-permanent residents	Temporary residents	Transient populations
Length of stay or visit	Intention to remain Attachment	Resident for 6 months, less than 1 year	Resident for between 2 weeks and 6 months	Temporary visitors – less than 2 weeks
Population groups	Long-term residents Maori (turangawaewae) Medium-term residents 'Newcomers' <ul style="list-style-type: none"> New Zealanders Migrants from overseas 	RSE workers (allowed 7-9 months) Earthquake rebuild workers (road, infrastructure, housing) Some WHS visa holders	WHS visa holders Earthquake rebuild workers (road, infrastructure, housing) Other temporary workers Holiday home owners	Tourists <ul style="list-style-type: none"> International visitors Domestic holidaymakers Holiday home visitors Travelling workers <ul style="list-style-type: none"> Earthquake & other Transiting
Demographic, social, spatial characteristics	Age, family status, occupation Community connectedness <ul style="list-style-type: none"> Schools, clubs, service organisations Location of dwelling Strong community connections	Age Visa conditions Country of origin Prior New Zealand experience Industry of employment Community connectedness Strong in-group connections	Age Visa conditions, length of stay Country of origin Industry of employment Community connectedness Some in-group connections Dispersed in community	Length of visit Purpose of visit Accommodation type Country of origin Dispersed in community
Type & availability of data	Census data describing resident population <ul style="list-style-type: none"> Good at local scale Migration & work permit data <ul style="list-style-type: none"> Mostly national scale, local scale data limited 	National level RSE scheme data <ul style="list-style-type: none"> Local scale data potentially available Mixed quality earthquake data National level WHS visa holder data	Limited data on some groups Earthquake population data best National level WHS visa data Holiday home owner data limited	Variable quality data National/regional tourist data good Domestic tourism data poor Accommodation data partial DOC data good No worker data No transit data
Overall visibility & knowledge of population	High	Moderate	Low	Moderate-low

rebuild workers with many of the former making repeated visits to New Zealand (often to the same regions and/or employers) via this scheme. Their length of their stay locates these population groups in the semi-permanent resident category on the continuum, although earthquake rebuild workers staying for less than six months would be classified as temporary residents only. The transient end of the continuum contains the wide variety of visitor groups – in a location at any given time for leisure, employment or in transit to elsewhere – described in the previous section.

In turn, each class (and the population groups represented by that class) can be described according to a variety of demographic, social and spatial characteristics (Table 2). While many of these characteristics are interrelated, they vary in respect of their salience in respect of that class of population ‘transience’. Taking age as an example of these differences, we have seen that many of the permanent residents found in New Zealand’s rural areas are in older age groups, which can have consequences in respect of maintaining school rolls and voluntary community groups. For many other population groups, however, age has more salience because of the upper age restrictions of most residency and work visas.

Likewise, the literature reviewed also suggests that there may be variations in how different groups connect into, and within, the community. While ‘connectedness’ generally increases in parallel with length of residence, this relationship can be affected by factors such as language differences, type of employment (which can determine spatial locations visited, work schedules, etc) and demographic and family circumstances (e.g., belonging to specific community groups, having children in local schools). In the case of permanent residents, for example, there may be a high degree of connectedness, but only to some community networks. In the case of RSE workers, and the earthquake rebuild population there may be limited connections beyond their immediate employment and social groups, but they may have a stronger within-group connection than do the WHS visa holders who are much more dispersed (both for employment and accommodation) throughout the host community.

There are also considerable variations in the type and availability of data describing each population group shown in Table 2. The most comprehensive data sets describe the permanent resident population. Work visa and residence regulations are important determinants of the length of time members of transient population groups are in residence, with some eventually attaining permanent residence (and citizenship) status, and others restricted to transient (or semi-permanent) status. The available data do not always capture the nuances of this progression. While it is perhaps more useful to consider all new migrants to a community in terms of being ‘newcomers’ there remain significant challenges when applying a temporal measure of ‘new’ (in respect of both length of residence and origin). It may, for example, take longer for migrants from outside New Zealand to assimilate and form community networks than people who are moving from other parts of New Zealand.

Of the transient worker groups, those in New Zealand on the RSE scheme are the most closely monitored (as a result of strict employment regulations and the annual visa quota) and have also attracted considerable research attention. The RSE workers and (to a lesser extent) the earthquake rebuild workers, are well-documented in situ as their employment, accommodation and community engagement are ‘managed’ by their employers. However, the size of the earthquake rebuild worker population is much more difficult to measure as it includes those from overseas (granted visas to work on the rebuild), workers from other parts of New Zealand

and local workers. Further, in respect of their length of stay, many of the earthquake rebuild workers are semi-permanent residents (and may be heading towards permanent residency) and some are only temporary residents. There may also be people associated with post-earthquake activity (e.g., insurance assessors, geotechnical experts) in the most transient (visitor) population.

At the most transient end of the continuum shown in Table 2, comprehensive international visitor data are collected. However, these data are most detailed at the national and broad regional scales, and are of limited use with respect to the WHS visa holders who are in New Zealand for extended lengths of time and who are part of the workforce. Data describing the travel patterns and behaviour of domestic tourists are considerably less robust. Communities with high numbers of holiday homes introduce a number of specific challenges in respect of non-resident property owners and a visitor segment that is particularly difficult to identify.

In part, the difficulty identifying visitor groups – such as holiday home visitors – relates to their visibility in the community and this, in turn, also determines how much is known about that population group. The final classification shown in Table 2 describes the overall visibility and knowledge of the population groups contained within each class of residence. For the most part there is a linear relationship, whereby visibility and knowledge decrease as transience increases; the international tourist population is the notable exception to this relationship.

This section has provided an outline of the population datasets that are available and presented some national level data describing the population groups found in rural New Zealand. The next section examines data relating to the study area at the regional, district and – where available – settlement level.

Population data

This section provides an introduction to the study region and examines some of the data describing the population groups identified in the previous section (see Table 2). While some of these data are available at only the national level, where possible they are presented at regional, district (TA) or settlement level.

Study region

The study is located within the area bounded by the State Highway network (SHs 63, 6, 65 and 7), and SH1 on the east coast, incorporating communities within the Marlborough, southern Tasman (Lakes/Murchison Ward), Kaikoura and Hurunui Districts (Figure 9).

Figure 9 Map showing area of study (March 2017)



Map source: <https://www.nzta.govt.nz/resources/plan-your-journey/>

About the data

Population data can be found from a number of sources, and at a variety of scales, including: national, regional, territorial authorities/district, (ward), area unit, and meshblock. However, as noted in the previous section, the majority of these population data relate to permanent residents or to semi-permanent population groups. Seasonal employment flows (of both international migrant workers and New Zealand residents) are not captured in these data. In the case of international visitors, national arrivals data are captured by month, while accommodation data are available by month and by region. Some data are available by RTO area. Data from the following sources are reported here:

- Statistics New Zealand – Census of Population and Dwelling
- Electoral Commission – Electoral Rolls
- Ministry of Education – School Rolls
- Ministry of Business, Innovation and Employment – Tourism Data

Statistics New Zealand data

The study area includes four districts (territorial authorities), which are also defined for statistical purposes at the area unit and meshblock levels (see Box 7). Territorial authority areas are also defined at the ward level for electoral purposes (see Box 8).

Box 7 Territorial authority definition

A territorial authority is defined under the Local Government Act 2002 as a city council or district council. There are 67 territorial authorities consisting of 12 city councils, 53 districts, Auckland Council, and Chatham Islands Council.

When defining the boundaries of territorial authorities, the Local Government Commission placed considerable weight on the 'community of interest'. While the size of a community was a factor, the relevance of the components of the community to each other and the capacity of the unit to service the community in an efficient manner, were the factors on which the Commission placed most emphasis.

Territorial authorities are defined at meshblock and area unit level.

<http://www.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/territorial-authority/definition.aspx>

Box 8 Ward definition

Wards are defined under the Local Electoral Act 2001 and result from the division, for electoral purposes, of the district of a territorial authority.

The ward system was designed to allow for the recognition of communities within a district and to increase community involvement in the local government system.

Ward boundaries are defined at meshblock level. They are not able to be defined at area unit level because the boundaries for ward do not align to the boundaries of area unit.

<http://www.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/ward/definition.aspx>

The districts of interest to this research, and the communities within those districts, can be described according to the following units of measurement (scales):

- Kaikoura District contains only two area units: Kaikoura Township and Kaikoura Rural area
- Hurunui District contains multiple area units (and five wards) with the following settlements represented by area units: Cheviot, Waiau, Culverden and Hanmer Springs. Rotherham is contained within the wider Amuri rural area unit
- Marlborough District contains the urban centre of Blenheim (comprised of multiple area units) and several discrete settlements represented by area units (e.g., Seddon, Picton, Renwick). The settlement of Ward is contained within the much wider Ward rural area unit
- Tasman District contains multiple area units, Murchison is one area unit while St Arnaud is represented by two meshblocks, one of which contains a much larger rural area than is represented by the settlement. St Arnaud falls within the Lake Rotoroa area unit and, together, Lakes/Murchison is a ward within Tasman District.

The Census of Population and Dwellings takes place every five years on a Tuesday in March¹³. However, the census time series was disrupted with the delay of the 2011 Census (until 2013) as a result of the 2011 Christchurch earthquake. The next census will take place in March 2018. The census collects data on a variety of population characteristics, including age, usual residence, years at usual residence and also asks respondents where they were five years previously (see Box 2).

The majority of census data are presented for the 'Census usually resident population' (CURP) which is a count of all people who usually live in that area and were present in New Zealand on census night. Excluded are:

- Visitors from overseas
- Visitors from elsewhere in New Zealand
- Residents temporarily overseas on census night.

Table 3 presents a summary of key statistics for New Zealand as a whole, and for each of the four districts of interest. The majority of these data are from the 2013 Census; the industry by employees count is for the year ended (February) as close as possible to the census date (5 March 2013).

Of the four districts, Hurunui had the strongest population growth (at almost twice the national average) since the previous census (2006), while growth in Tasman was similar to the national average. Marlborough had only a modest population increase, while Kaikoura had a modest population decrease. Compared with the national population, the population in all four districts had an older median age, a smaller percentage of people born overseas and a larger percentage of people with European ethnicity.

Hurunui was the most agricultural (measured by the number of employees), followed by Tasman and Marlborough. The most common industries employing the Kaikoura population were accommodation and food services and retail trade, related to high reliance on tourism. The larger economies (and populations) of Tasman and Marlborough had a more even spread

¹³ Statistically, the month and weekday on which New Zealanders are least likely to be travelling.

across industry groups, with manufacturing the second most common industry in both and health services represented in both districts (Table 3).

Population density was lower than found nationally, in all four districts. Hurunui and Kaikoura had the lowest density, reflecting the rural nature of each district (and small population centres) while the slightly higher density in Tasman and Blenheim are indicative of the larger urban centres present in each district. The much higher national population density figure relates to both the high percentage of urban residents (see Figure 1) and the concentration of population in, and around, the main urban centres (e.g., Auckland and Christchurch both have significant urban sprawl).

Table 3 Summary of key statistics – New Zealand and selected districts

	New Zealand	Tasman	Marlborough	Kaikoura	Hurunui
Population (CURP)	4,242,048	47,154	43,416	3,552	11,529
Change since 2006	+5.3%	+5.7%	+2%	-1.9%	+10.1%
Population density*	15.9	4.9	4.2	1.7	1.3
Median age	38 years	44.2 years	45.0 years	45.6 years	43.6 years
Born overseas	25.2%	17.8%	16.0%	13.1%	15.0%
European ethnicity	74.0%	93.1%	89.2%	87.7%	93.4%
Access to internet	76.8%	75.9%	75.0%	72.3%	75.1%
Access to cellphones	83.7%	82.0%	82.3%	80.4%	82.3%
Industry** by employees count (to year end February 2013)	10.9% Manu 10.9% Health 10.1% Retail 8.6% Educ/Train 6.9% Acc/Food 6.4% Constr 5.7% Agric 4.2% Transport	26.3% Agric 12.5% Manu 10.7% Retail 8.1% Acc/Food 6.3% Health	17.7% Agric 16.5% Manu 10.9% Retail 8.7% Health 8.0% Acc/Food	25.5% Acc/food 15.3% Retail 12.1% Agric 8.3% Educ/train 7.6% Transport	36.8% Agric 12.4% Acc/Food 7.3% Educ/Train 7.0% Manu 6.6% Constr

*People per km². Data sourced from http://www.localcouncils.govt.nz/lcip.nsf/wpg_URL/Profiles-Index?OpenDocument

**Full industry classifications (ANZSIC 2006): Agriculture, Forestry and Fishing; Mining; Manufacturing; Electricity, Gas, Water and Waste Services; Construction; Wholesale Trade; Retail Trade; Accommodation and Food Services; Transport, Postal and Warehousing; Information Media and Telecommunications; Financial and Insurance Services; Rental, Hiring and Real Estate Services; Professional, Scientific and Technical Services; Administrative and Support Services; Public Administration and Safety; Education and Training; Health Care and Social Assistance.

In addition to the census usually resident population, the census also reports the number of people present at each location on census night (i.e., 'Census night population count'). These data give some idea of how many visitors are in a location on census night. As noted, holding the census on a Tuesday in March reduces the likelihood of New Zealand residents being away from their homes. Also, although it is not one of the busiest months¹⁴ for international arrivals there are still significant numbers of international visitors in the country in March. At the 2013 Census there were 111,150 more people in the census night population count than in the

¹⁴ December and February are the peak months for international arrivals (Wilson & Simmons, 2016).

usually resident population, indicating that 2.6% of the census night population were international visitors (i.e., the New Zealand residents who were away from their usual residence were included in the census night population count somewhere else in New Zealand and recorded under their usual residence in the CURP data, whereas international visitors are not counted as part of the census usually resident count).

Table 4 shows population data for the Tasman District locations which fall within the study area. Murchison and St Arnaud are both contained within the Lakes-Murchison Ward, with Murchison representing a single area unit and St Arnaud represented by two meshblocks (MB 2383103 & MB 2383102) within the wider Lake Rotorua Area Unit. These data show that the two meshblocks containing St Arnaud had a high percentage of visitors present on census night (68% and 43%) while 26% of the people in Murchison on census night were not usually resident there.

Table 4 Tasman District – population data (selected Ward/Area Units/Meshblocks)

Ward/Area Unit (selected)	CURP	Census night population count	Difference (non-resident pop.)	% of census night pop.
Lakes-Murchison Ward	3,429	3,849	+420	10.9
Murchison Area Unit	492	669	+177	26.4
Lake Rotorua Area Unit	615	801	+186	23.2
St Arnaud (MB 2383103)	54	168	+114	67.9
St Arnaud (MB 2383102)	51	90	+39	43.3

Table 5 compares the usually resident population with the census night population for the Marlborough Region (by wards and by selected area units). As might be expected, the Marlborough Sounds Ward had the largest percentage of visitors included in the Census night population count (16%) with visitors also making up 95% of those recorded in the Area Outside Ward (which represents the Oceanic-Marlborough Region). In comparison, just under 4% of those counted in both the Wairau-Awatere and Blenheim Wards were visitors, although 16% of the people in the Blenheim Central Area Unit were visitors.

Table 5 Marlborough District – population data (all Wards, selected Area Units)

Wards (all)	CURP	Census night population count	Difference (non-resident pop.)	% of census night pop.
Marlborough Sounds Ward	7,806	9,306	+1500	16.1
Wairau-Awatere Ward	10,650	11,085	+435	3.9
Blenheim Ward	24,957	25,914	+957	3.7
Area Outside Ward	51	963	+912	94.7
Blenheim Central	2,706	3,231	+525	16.2
Seddon (settlement)	507	546	+39	7.1
Ward (rural area)	930	936	+6	0.6

Table 6 shows the same data for the three Hurunui wards contained within the study region. These data clearly show the predominance of visitors in the Hanmer Springs Ward. The 921 people in Hanmer Springs Ward on census night who were not part of the usually resident population count represent 46% of the census night population count.

Table 6 Hurunui District - population data (selected Wards)

Wards (selected)	CURP	Census night population count	Difference (non-resident pop.)	% of census night pop.
Hanmer Springs Ward	1,074	1,995	+921	46.2
Amuri-Hurunui Ward	3,519	3,516	-3	-
Cheviot Ward	1,359	1,365	+6	0.4

Table 7 shows the same data for selected area units within these Hurunui Wards. It should be noted that in this case the ward and area unit (statistical) boundaries do not align very well (see Box 8 and Figure 13). At area unit level, visitors represented 43% of the census night population in Hanmer Springs. While the settlements located in the Amuri-Hurunui Ward (i.e., Culverden, Waiau, Rotherham) did not have many visitors, 15% of the people present in the wider Amuri area unit on census night were not part of the usually resident population. As noted above, these data do not include any of the usually resident population who were overseas on census night.

Table 7 Hurunui District - population data (selected Area Units)

Area Units (selected)	CURP	Census night population count	Difference (non-resident pop.)	% of census night pop.
Hanmer Springs	840	1,473	+633	42.9
Culverden	426	420	-6	-
Waiau	261	264	+3	1.1
Amuri	1,644	1,926	+282	14.6
Parnassus	939	939	0	-
Cheviot	372	375	+3	0.8
Hurunui	2,640	2,598	-42	-

Table 8 shows these data for the two area units that make up the Kaikoura District (Kaikoura District is not represented by any wards). Altogether, 29% of the census night population in the Kaikoura Township were visitors, along with 7% of the census night population in the Kaikoura Rural area.

Table 8 Kaikoura District – population data (all Area Units)

Area Units (all)	CURP	Census night population count	Difference (non-resident pop.)	% of census night pop.
Kaikoura Township	1,971	2,757	+786	28.5
Kaikoura Rural	1,581	1,707	+126	7.4

While these census data are constrained by representing only one night every five years they do give an indication – for individual locations – of the proportion (and number) of people who are present on census night, but not normally resident in that location. Census data represent an official count of the number of people and dwellings in New Zealand and are used by national and local government to calculate funding allocations and support planning initiatives. The next census will take place on 6 March 2018. More up-to-date, but partial, population data can be found via Electoral and School rolls.

Electoral roll data

Electoral enrolment statistics provide an estimate (based on projections using 2013 Census population data) of the number of people eligible to vote and the number enrolled to do so. Table 9 shows the electoral roll population data as at 23 September 2017 (the date of the national election). Of the four districts, Hurunui had the lowest percentage of eligible voter enrolment and Tasman had the highest.

Table 9 Electoral roll population data – by District

District	Estimated eligible population (23/09/17)	Number enrolled	Percentage enrolled
Hurunui	9,870	8,736	88.51%
Marlborough	36,220	34,952	96.50%
Kaikoura	3,010	2,743	91.13%
Tasman	39,410	38,574	97.81%

Data source: <http://www.elections.org.nz/research-statistics/enrolment-statistics-council>

While these data apply only to those eligible to vote (see Box 1) they do provide a more up-to-date dataset of people aged 18 or over who are resident in each district. Many of those aged under 18 are captured by the school roll statistics.

School roll data

The Ministry of Education school roll dataset records annual enrolment numbers (Year end July) by school and by region/district. Data are recorded by gender and by ethnicity with the latter reported as: European/Pākehā; Māori; Pasifika; Asian; MELAA (Middle East, Latin America, African); Other; or, International fee paying¹⁵. Table 10 shows the number of students enrolled in each district in the 2006 and 2013 census years and in 2016. The Hurunui District had significant growth in students over the 2006-2016 decade (17%) with more modest growth of 8% in Tasman. Both Marlborough and Kaikoura lost students over these ten years although there has been some recovery in Marlborough since 2013.

Table 10 Student numbers 2006, 2013 and 2016, by district

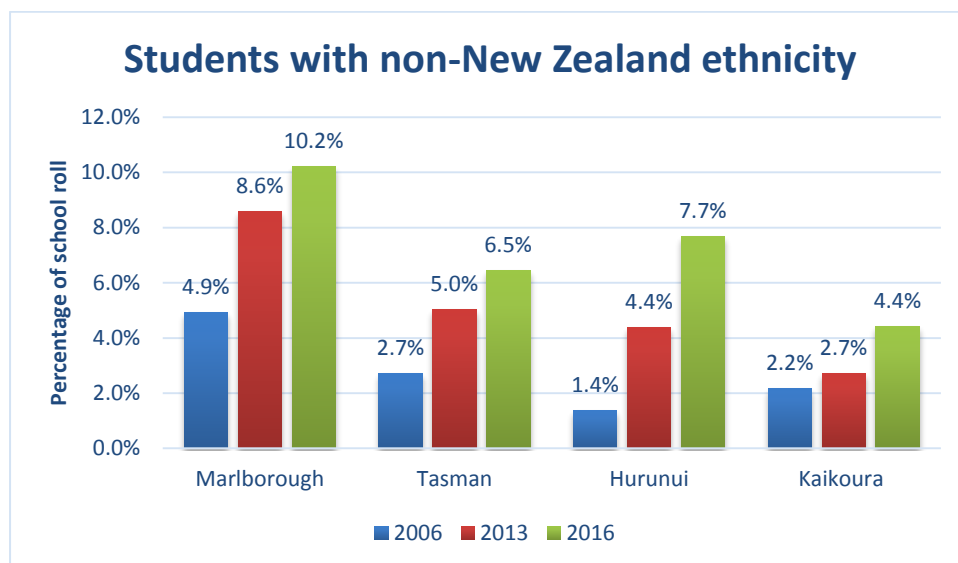
	2006 roll (Year end July)	2013 roll (Year end July)	2016 roll (Year end July)	Difference 2006-2016	Percentage change 2006-2016
Marlborough	6,706	6,449	6,688	-18	-0.3
Tasman	7,430	7,838	7,997	+567	7.6
Hurunui	1,378	1,436	1,616	+238	17.3
Kaikoura	554	514	476	-78	-14.1

Data source: <http://www.educationcounts.govt.nz/statistics/schooling/student-numbers/6028>

Increases in student numbers are closely related to migration and Figure 10 shows the percentage of students from the non-New Zealand ethnic groups (i.e., excluding those recorded as having European/Pākehā and Māori ethnicity) in 2006, 2013 and 2016 in each district. While this is a coarse classification measure, these data provide an indication of migrant growth in the four districts.

¹⁵ Prior to 2009, NZAID / MFAT students and International fee-paying students were combined. NZAID / MFAT students are now considered to be domestic and are part of the regular ethnic group counts.

Figure 10 Percentage of students with non-New Zealand ethnicity by district (2006-2016)



Data source: <http://www.educationcounts.govt.nz/statistics/schooling/student-numbers/6028>

A 2014 report on social service provision in the Hurunui District noted the increasing diversity in school rolls and the establishment of a Migrant Family Coordinator position in the Amuri Area School, where 8% of the roll is Filipino (Greater Canterbury Community Response Forum, 2014). Education is as an important economic activity in many districts and the education and training industry group accounted for 8.3% of employees in the Kaikoura District and 7.3% of employees in the Hurunui District (see Table 3). The Marlborough Visitor Economy Strategy notes the value of attracting new students to the region (Marlborough District Council (MDC), 2014).

Tourist (visitor) data

A variety of government agencies are responsible for the collection of visitor data. These data capture information about only some of the transient population groups introduced earlier. Primarily, these data describe what are commonly referred to as (leisure) tourists. Statistics New Zealand produces a monthly report of *International Visitor Arrivals to New Zealand* (IVA) (sponsored by Tourism New Zealand) and, in association with MBIE, provide data describing both international and domestic travel in New Zealand and a variety of economic tourism datasets and analyses. These include the Monthly Regional Tourism Estimates (MRTes) which provide an estimate of regional monthly expenditure on tourism from both international and domestic consumers, and the International Visitor Survey (IVS) which measures the travel patterns and expenditure of international visitors to New Zealand.

These data are commonly available at both the national and broad regional levels, and by Regional Tourism Organisation (RTO) area. When available, Territorial Authority (TA) data are often presented as a subset of either regional council or RTO areas. According to these classifications, the four TAs in question are represented as follows:

- Kaikoura District – Canterbury Region, spend and commercial accommodation data are reported for either a combined North Canterbury RTO (along with the Waimakariri and

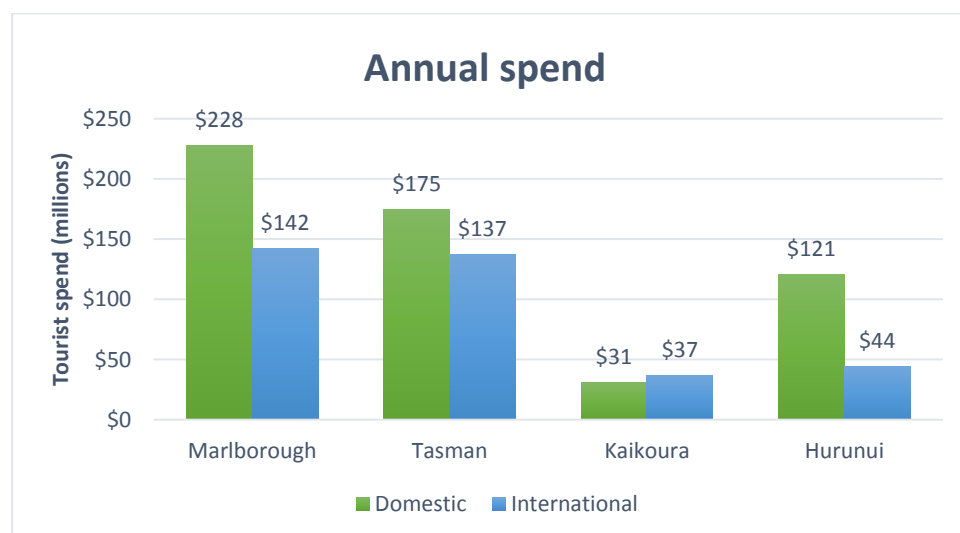
Hurunui Districts) or Canterbury RTO (containing Ashburton District, Christchurch City, Kaikoura District, Selwyn District, Waimakariri District, Waimate District)

- Hurunui District – Canterbury Region, spend data reported for combined North Canterbury, accommodation data reported for Hurunui RTO¹⁶
- Tasman District – Tasman Region, part of Nelson-Tasman RTO (along with Nelson City)
- Marlborough District – Marlborough Region, Marlborough RTO

Figure 11 shows annual spend data relating to each district, sourced from the Monthly Regional Tourism Estimates. Kaikoura is the only one of the four districts in which spending by international visitors (54.4%) exceeded that by domestic visitors. Hurunui had largest percentage of domestic spending (73.3%), followed by Marlborough (61.6%) and Tasman (56.1%).

The Commercial Accommodation Monitor (CAM) is run by Statistics New Zealand on behalf of MBIE with some data reported by RTO area. These data are a census of all short-term (i.e., less than one month) commercial accommodation units that are GST registered and have a turnover of at least \$30,000 a year. As such, these figures do not include hosted accommodation (including private hotels, guesthouses, bed and breakfasts and farm stays) or the many domestic and international VFR visitors who stay in private accommodation. A summary of key tourism statistics prepared post-earthquake for the Kaikoura and Hurunui Districts showed that there were only 46 and 48 commercial accommodation establishments, respectively¹⁷. It should be noted the accommodation data includes all visitor types described under the transient class of residence (Table 2) and not only those visiting for (leisure) tourism purposes.

Figure 11 Annual tourism spend by district (Year ended July 2017)



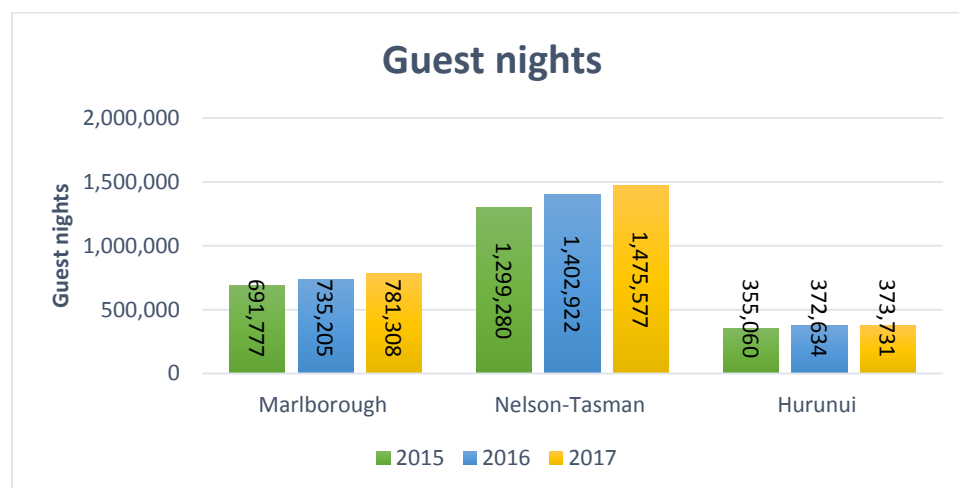
Data source: <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/monthly-regional-tourism-estimates>

¹⁶ These data report Hurunui as a separate RTO from the Canterbury RTO. No separate Kaikoura data are available. The Regional Tourism Organisations New Zealand website shows there to be a Canterbury RTO, along with separate ones in Kaikoura, Mackenzie and Timaru (<http://www.rtonz.org.nz/rto-location-map.html>).

¹⁷ <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/key-tourism-statistics-for-kaikoura-and-hurunui-districts/?searchterm=kaikoura%2A>

Figure 12 shows the CAM data (commercial guest nights) for the past three years (Year ended June) in Marlborough, Tasman-Nelson and Hurunui. Data for Kaikoura were not available, although the post-earthquake MBIE data noted above reported that there were 198,787 commercial guest nights in Kaikoura for the year ended July 2016: these data also show 372,408 commercial guest nights (Year ended July 2016) in Hurunui (similar to the 372,634 – Year ended June 2016 – nights reported below in Figure 12).

Figure 12 Guest nights Marlborough, Nelson-Tasman and Hurunui (Year ended June 2015-2017)



Data source: http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/commercial-accommodation-monitor/documents-image-library/key-data-tables/current-year-tables/CAM_key_data_Jun_2017.pdf

MBIE also present a selection of data relating to selected locations via an interactive map. Kaikoura, Hanmer Springs and Blenheim were the only locations in the research area included in these data. Table 11 shows the average estimated visitor numbers and visitor nights for international visitors to New Zealand over the past five years for these three locations. However, these data (IVS) are based on small sample sizes and should be treated with caution.

Table 11 Estimated visitor numbers and visitor nights for international visitors – average over past five years

Location	Visitor Numbers	Visitor Nights
Blenheim	62,422	423,446
Kaikoura	117,332	247,358
Hanmer Springs	54,832	109,487

Data source: <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/ivs/international-visitors-nights-interactive-map>

As noted above, the CAM data represents only some of the visitors who stay overnight in a location; it also misses day visitors and travellers who are in transit. Research undertaken in the late 1990s¹⁸, for example, identified three visitor types in Kaikoura:

- Short-stop visitors (43% of visitors, 75% domestic) stopping for fewer than two hours;
- Day visitors (16% of visitors, 59% international) stopping for more than two hours, but not staying overnight;
- Overnight visitors (41% of visitors, 75% international) with an average length of stay of 1.8 nights (Simmons et al., 1998).

¹⁸ While these data are almost 20 years old the basic patterns of visitation remain the same – but significantly increased in volume.

There are a number of difficult-to-measure visitors (e.g., the short-stop and day visitors noted above, freedom campers and holiday home visitors) who may have a significant presence in some locations. For example, the average annual international visitor nights of 109,487 reported for Hanmer Springs (Table 11) represents an average of 300 visitors per night, whereas there were 633 visitors present in Hanmer Springs on 2103 Census night (Table 7).

The IVS provides two measures of the number of international visitors who freedom camp: the number of visitors for whom freedom camping is the main form of accommodation and the number who freedom camped at least once during their visit. These data show that the number of visitors who did some freedom camping was around 80,000 per year (in 2016), up from only 10,000 in the early 2000s. However, freedom campers only represent 2% of the total number of visitors to New Zealand and are, potentially, one of the most widely dispersed of the visitor groups.

Measuring the number of holiday homes in a location is difficult, although the number of unoccupied dwellings at census time can be taken as a proxy measure (Simmons et al., 2016). Table 12 shows the 2013 Census data relating to dwellings in Hanmer Springs, the Kaikoura Township and the Lake Rotoroa area unit (which contains St Arnaud).

Table 12 Occupied and unoccupied dwellings – selected locations

	Occupied dwellings	Unoccupied dwellings	Total dwellings	Unoccupied as % of total
Hanmer Springs	444	645	1,089	59.2%
Kaikoura Township	939	387	1,326	29.2%
Lake Rotoroa	294	267	561	47.6%

Visits by holiday home owners are not captured in any visitor data and the CAM does not include private holiday home rentals. As shown previously, however, the census night population in Hanmer Springs consisted of 43% visitors; in Kaikoura, visitors made up 29% of the census night population. While visitors represented only 23% of the census night population in the Lake Rotoroa Area Unit, they represented 68% of the census night population in the meshblock containing the majority of the St Arnaud settlement (see Table 4).

The earthquake drew attention to the number of visitors in Kaikoura at the time the earthquake struck, with media reports providing various estimates: one suggested that overseas visitors represented 85% of the population at the time (Mitchell & Redmond, 2016); another reported that 1,100 tourists were in town (Withers, 2016). These visitors, along with many locals, were evacuated by helicopter, ship, and road in the days after the earthquake (Daly, 2016). Evacuated visitors left more than 300 rental vehicles behind (Cropp, 2016a).

Earthquake response and rebuild population

The Kaikoura earthquake occurred at the start of the busy summer season and had a significant impact on visitor bookings in the Kaikoura and, to a lesser degree, the surrounding districts. Post-earthquake cancellations in Kaikoura were significant, although the lost visitor accommodation market was replaced to some extent by road workers, contractors and insurance assessors in the months after the earthquake. One Kaikoura letting agency was

reported to have filled 80 rentals within five weeks following the earthquake and the number of tradesmen and contractors increased as insurance claims were settled (Lewis, 2017b).

There have been more than 1300 workers involved in the repairs to SH1 (Hayward, 2017e) with 100 people based in the NCTIR¹⁹ Kaikoura office²⁰. Although some local contractors have been engaged, many of these workers have come from outside the area and in some cases, outside New Zealand. A temporary accommodation camp was constructed in Kaikoura to house 300 workers, with others staying in commercial accommodation, rental properties and holiday homes in the town (Brown & Lewis, 2017). Contractors working on SH1 (south) have also been based in Cheviot, with Culverden, Waiau and Rotherham hosting some of the contractors working on the Inland Route. Some of the contractors and road workers upgrading SH63 were occupying some commercial accommodation in St Arnaud, although contractors preferred to house them in 'baches' (Eder, 2017b). A temporary camp, housing 30 workers, was also established in Clarence (at the grounds of the former Woodbank School, which closed in 2014) and was expected to remain for at least 12 months (Kitt, 2017a). There have also contractors working on SH1 (north) based in Ward and Blenheim.

Data overview

Together, census, electoral and education data provide considerable detail on the demographic characteristics of the resident population and key industries (measured by number of employees) in different locations. This is the population found on the far left of the population transience continuum proposed in Table 2. Census data also gives some idea of the size of the visitor population present in any given location (at least on census night). As noted in the previous section, however, data relating to temporary (or migrant) working populations are generally only available at the national scale and are not captured by any of the data sources reported here. On the population transience continuum (Table 2) these population groups may be classified as either semi-permanent or temporary residents, depending on the length of time they are present in the community.

Data describing the more transient of these worker populations, such as those holding WHS visas, are restricted to the number of visas issued annually; while these data are available by nationality (of holders) there are no data describing where in New Zealand, or at what jobs (and how long for) WHS visa holders work. Other visitor data (describing the transient population groups on the far right of Table 2) are available at a variety of scales (e.g., regional, TA, RTO, and sometimes, individual locations) but are limited in respect of the types of visitors they describe. Some of the most significant visitor groups such as, for example, holiday home owners and renters, day trippers, domestic travellers of all types (e.g., including those visiting for leisure, education, employment, sport, and so on) and freedom campers are not captured by current data sets.

Despite these data limitations, the data presented here, while focused on the project research area, describe the diversity of population groups common to many settlements and rural areas

¹⁹ The North Canterbury Transport Infrastructure Recovery (NCTIR) was set up by the government late December 2016 to restore the earthquake damaged infrastructure between Picton and Christchurch. NCTIR is an alliance partnership between the NZ Transport Agency, KiwiRail, Downer, Fulton Hogan, HEB Construction and Higgins.

²⁰ <https://www.nzta.govt.nz/projects/kaikoura-earthquake-response>

around New Zealand. In respect of this research, these data provide contextual information pertaining to the four districts – and the nine potential case study locations – included in the research area. These are examined in more detail in the following section.

Case study locations

In this section we examine the nine potential case study locations in more detail. To begin, the preliminary fieldwork trip, undertaken to collect data on each community, is described. Then, each district (and the communities visited within that district) are examined in more detail. A summary of these rural communities is presented and the rationale for the selection of the four case study locations is explained.

Preliminary fieldwork

A preliminary fieldwork (scoping) trip, undertaken over four days in September 2017, was designed to collect data to inform case study selection and as a familiarisation exercise for the research team. The communities visited were Cheviot, Waiau, Rotherham, Hanmer Springs, Murchison, St Arnaud, Blenheim, Seddon and Ward. Table 13 presents a summary of these by location, size and urban area type. While Kaikoura was also a community of interest it was not included in the preliminary fieldwork for the following reasons:

- Because of on-going closures enabling repairs to SH1 (south) visiting Kaikoura would have added a significant amount of travel time to the scoping trip²¹
- The research team was familiar with Kaikoura from past research and was involved in immediate post-earthquake response documentation (Simmons et al., 2016)
- There is some concern within the wider rural (and Kaikoura) research projects of the Resilience Challenge that Kaikoura could become overburdened with researchers
- The research team had previously attended an open-day at the NCTIR workers village (23 July 2017).

In preparation for the scoping trip a desktop investigation of each community was undertaken. This involved a review of council websites (to identify community structure and governance) and a review of post-earthquake publications (from councils, other governmental and administrative organisations and media) relating to each community. Through this review a number of key individuals (i.e., with a particular focus on holders of local governance roles or prominent local identities involved in community support) in each community were identified. An informal meeting was then arranged with one such person in each location visited. As is typical in small rural communities the majority of these people were involved in multiple community activities.

While pre-arranged, these meetings were informal conversations, rather than formal interviews, although each followed a similar structure. To begin, a description of the research was provided, followed by broad discussion of that community's experience of the earthquake (including impacts, response and recovery). Subsequent questions were directed towards the range of population groups present in each community, and the differences between these in respect of vulnerability, adaptation and resilience. While to a large extent the discussion remained earthquake-focused, a conscious effort was made to explore these topics more broadly in respect of general day-to-day life in the community (i.e., not just for hazard events). Where relevant, there was also some discussion about extant support organisations for new migrants and transient populations (again, both in general and in the event of a hazard event occurring).

²¹ As it happened, the scoping trip coincided with a period of very wet weather and for two of the four days both SH1 (south) and Inland Route 70 were closed, isolating Kaikoura.

Detailed notes were taken throughout and the names and/or contact details for potential participants (should that location be selected as one of the case studies) were recorded.

Table 13 Preliminary fieldwork visits – (potential) case study location summary data

	District	Scale unit*	Census Usually Resident Population 2013	Urban Area Type*
Blenheim	Marlborough	Ward	24,957	Main urban area
Seddon	Marlborough	Area Unit	507	Rural centre
Ward	Marlborough	Area Unit (Meshblock)	930 (108)	Rural
St Arnaud	Tasman	Meshblock (x2)	54 + 51	Rural
Murchison	Tasman	Area Unit	492	Rural centre
Hanmer Springs	Hurunui	Area Unit	840	Rural centre
Waiau	Hurunui	Area Unit	261	Rural centre
Rotherham	Hurunui	Meshblock	48	Rural
Cheviot	Hurunui	Area Unit	372	Rural centre
Kaikoura	Kaikoura	Area Unit	1,581	Minor urban area

*Statistics New Zealand classifications

The following sections present information on each community visited. In each, an overview of the district economy and earthquake impacts is provided as context for the data relating to the individual communities. Each community is described according to: a selection of key population and earthquake impact data already reported; material collected from media reports and other published records; and, from data collected during the scoping fieldwork. The Kaikoura District is included by way of background material but, as noted above, was not visited.

Kaikoura District

The Kaikoura District, situated on the east coast of the South Island, is the northernmost district of the Canterbury region. The Kaikoura township is located on the coast just north of the Kaikoura Peninsula. The Hikurangi trench (reaching depths of more than 3,000 metres), with its abundance of marine wildlife, lies offshore while inland the Kaikoura Ranges rise to heights of over 2,500 metres. The Kaikoura District is bordered to the north and west by the Marlborough District and to the south and west by the Hurunui District. As noted in Table 3, the largest employment industries in the Kaikoura District were accommodation and food services (25.5%), retail (15.3%) and agriculture, forestry and fishing (12.1%). Kaikoura was the first local authority in the world to achieve recognition by the EarthCheck Community Standard and the first in the Southern Hemisphere to attain platinum status.

The earthquake caused considerable damage to buildings and infrastructure throughout the Kaikoura District (see 'Earthquake impacts and effects' and 'Earthquake response and rebuild population' sections of report). As noted previously, the most significant impacts in respect of tourism have been the closure of SH1 and the seabed uplift which has affected marine tourism operators' access to the marina. Although the Inland Road (Route 70) and SH1 (south) provide access to Kaikoura, the absence of a through route to the north has affected visitor numbers. In turn, the reduction in visitor numbers has also impacted on the number of WHS visa holders working over the summer season in Kaikoura. A March 2017 update, published by Destination Kaikoura (2017c), reported that Kaikoura was seeing a steady flow of visitors and announced a \$870,000 government support package to promote tourism in Kaikoura and other upper South Island districts impacted by the earthquake.

Post-earthquake, rebuild workers, displaced homeowners and returning visitors have put the accommodation supply in Kaikoura under considerable pressure (Lewis, 2017b; Church, 2017). Some Kaikoura residents who had been working in tourism jobs prior to the earthquake had switched to construction work on the road rebuild; the NCTIR accommodation village was also housing backpackers who would have normally been working in tourism and hospitality jobs (Truebridge, 2017). A range of material relating to earthquake recovery in Kaikoura can be found on the Kaikoura District Council (KDC) website (<https://www.kaikoura.govt.nz>).

For the reasons noted previously, Kaikoura was not visited during the preliminary fieldwork although it has been selected as one of the four case study locations of this research for the following reasons:

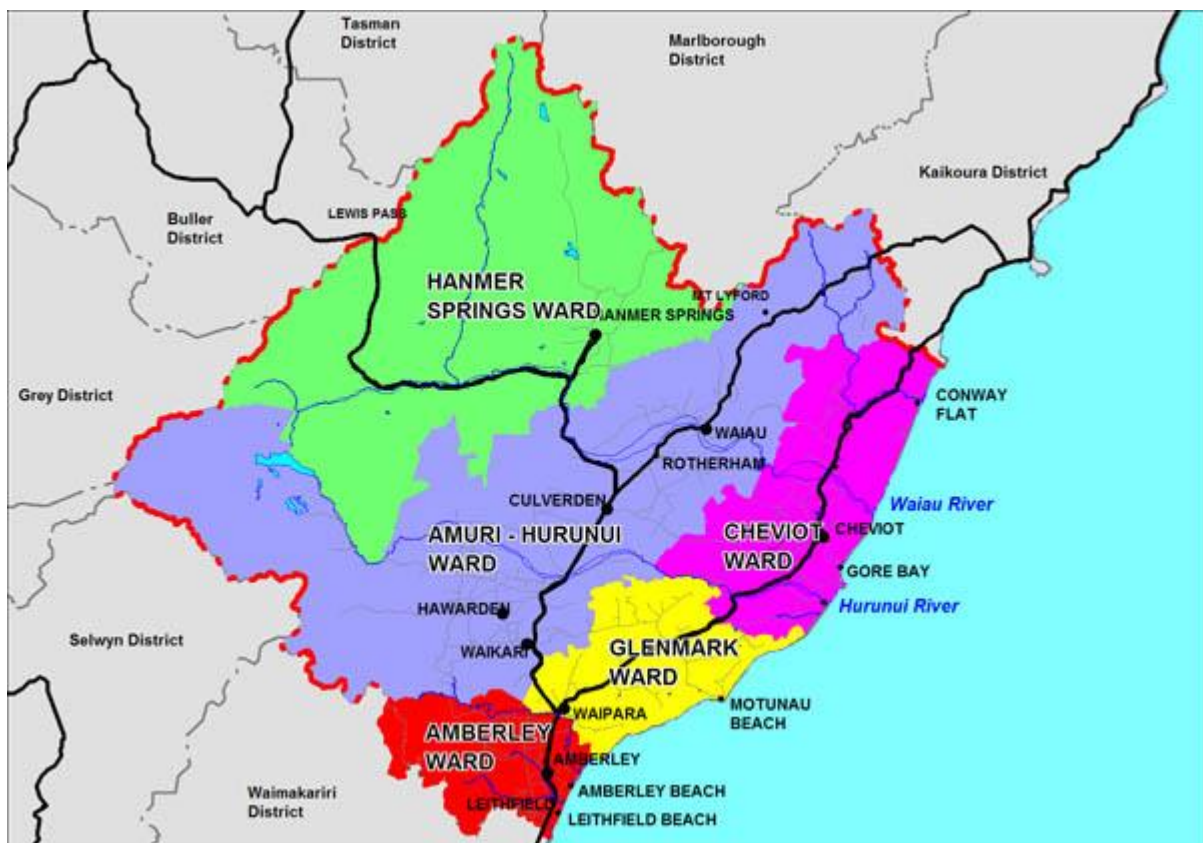
- It represents a rural community that is highly dependent on tourism
- The inclusion of Kaikoura complements other Kaikoura-based research being undertaken within the RNC rural research programme.

Hurunui District

The Hurunui District stretches from the east coast to the main divide and stretches from Leithfield Beach in the south to the Conway River in the north. The district was historically agricultural (i.e., pastoral, and more recently dairy farming), but in recent decades has diversified to include viticulture and tourism. The areas of interest for this research lie within three of the five Hurunui Districts wards: the Amuri-Hurunui Ward (Waiau and Rotherham), Cheviot Ward (Cheviot) and Hanmer Springs Ward (Hanmer Springs) (see Figure 13).

Farming dominates in the Amuri-Hurunui Ward with an extensive number of conversions in recent years from traditional sheep farming to irrigated dairy farming. Water issues, shortages of farm labour, and the retention of local services and businesses have been identified as long-term challenges in the district (HDC, 2012). Cheviot Ward remains a traditional farming area, although there has been some viticulture development in recent years. While Hanmer Springs Ward contains large areas of forest and provides access to high country conservation areas, tourism dominates the local economy. The hospitality industry was the single largest employer in the Hanmer Springs Ward in 2012, employing around 30% of the ward's full-time workers, and the Hanmer Springs settlement contained more than 600 holiday homes (HDC, 2012).

Figure 13 Map of Hurunui District



Map Source: <http://www.hurunui.govt.nz/your-council/committees/ward-representation/>

Prior to the earthquake Hurunui was a fast-growing district with population growth of 10.1% (see Table 3). Changes in agricultural production have brought a number of new population groups to the wider Hurunui District, including many new migrants from overseas such as Filipinos (dairying) and Pacific Islanders (viticulture). The Hurunui District also attracted some of

the earthquake-displaced Christchurch population after the earlier 2010 and 2011 Canterbury earthquakes.

As a result of these population changes, and of its location close to Christchurch (and impacts of the Canterbury earthquakes), a number of Hurunui District community resource materials had been prepared prior to the Kaikoura earthquake. These include a *Hurunui Community Newcomer Profile* (MSD, 2014) and the *Hurunui Community Report* (Greater Canterbury Community Response Forum, 2014). More recent material contained within the Public Services Committee Meeting Agenda for 10 August 2017 included updates to Civil Defence Emergency Management, social recovery and the social recovery plan for Hurunui District (HDC, 2017).

In total, the Hurunui District Council has nine councillors elected from the five wards and a Mayor who is elected from the district as a whole. Within the wider Hurunui District governance structure, the three wards of interest are represented as follows²²:

- Cheviot Ward (Cheviot) is represented by one councillor
- Hanmer Springs Ward (Hanmer Springs) is represented by one councillor and has an elected Community Board
- The Amuri-Hurunui Ward (Waiau and Rotherham) is represented by three councillors. Two Community committees cover this area.

Cheviot

The rural centre of Cheviot had a population of 372 at the 2013 Census, and is a service centre for the surrounding pastoral farming community and for highway traffic using SH1. It is located approximately 100kms north of Christchurch and 70kms south of Kaikoura. The settlement has both police and ambulance stations while the Civil Defence Sector Post is located at the Service Centre and the Welfare Centre at the school. The Cheviot Area School (Composite, Years 1-13) has a roll of 198 pupils (1 July 2016)²³. There is a cluster of holiday homes at nearby Gore Bay.

Initially, with SH1 closed both north and south of Kaikoura, Cheviot went from being a popular stopping point on the main highway to a 'road to nowhere' destination and many businesses struggled post-earthquake (Hayward, 2016). One Cheviot business owner was quoted as saying "We ride on the shirt tails of Kaikoura and the shirt tails of the Picton ferry – that's a huge amount of our business" (Ineson, 2016). Many businesses only survived with the assistance of government grants and although the reopening of SH1 (south) alleviated this to some extent, traffic volumes were still well down with ongoing road closures (Mitchell & Jones, 2016); during 2017 some attempt was made to attract visitors to Cheviot via a new marketing campaign highlighting walking and cycling trails near the town (Stuff, 2017).

Scoping trip notes

In Cheviot we met with the councillor who represented the Cheviot Ward. People are attracted to Cheviot by inexpensive housing. Newcomers include retired people and people displaced from the Christchurch earthquake, Filipinos (on dairy farm conversions) and RSE workers. Overall, the rural community struggles as new people often don't 'join' the community. One of

²² <http://www.hurunui.govt.nz/your-council/committees/ward-representation/>

²³ All school data sourced from <http://www.educationcounts.govt.nz/statistics/schooling/student-numbers/6028>. School designations include: Contributing (Years 1-6); Full Primary (Years 1-8) and Composite (Years 1-13).

the biggest employers in the Hurunui District – Harris Meats – is located nearby and has struggled to get staff. Accommodation shortages can be an issue in rural areas as many employers need to house their staff. There has always been a flow of itinerate farm workers (e.g., shearers), although many are locally based nowadays. An RSE worker accommodation premises has been established; RSE workers are also provided with pastoral care services. There have also been some road-rebuild workers housed in Cheviot. In terms of visitors passing through Cheviot, there are more transiting travellers than tourists; the holiday home owners/renters staying in Gore Bay do not mix in the Cheviot community much. There have always been people in the town with no jobs who are attracted by the ‘cheap’ housing.

There are a number of common rural issues facing Cheviot. While there is a medical centre, the reliance on locums presents challenges and it is difficult for local nurses to keep their practice certificates up-to-date. The Cheviot community are also unable to support a daily ambulance service because of the difficulty getting volunteers for ambulance and other emergency services. Keeping these and retail services alive is seen as key to community survival and cohesion. There can be issues associated with distance to, and from, other population centres. They do have a policeman who was described as being a ‘good country cop’.

There was some perception that in an emergency situation rural people have the requisite skills and equipment (to cope and respond) unlike urban populations. Locals are perceived to be well-informed about the people in the community and have the capacity to look after those people. There appears to be some resentment when outsiders come in and take over, such as happened after the Kaikoura earthquake.

There have been some post-earthquake changes to emergency management procedures in Cheviot with the instigation of community phone lists (logged at the Civil Defence Sector Post) and increased neighbourhood watch activities. Since the road closed they have received fewer call-outs to road accidents and staff hours in many businesses have been affected by reduced traffic volumes. There is hope that once the road opens life will ‘return to normal’ (i.e., pre-earthquake). It was perceived to be better to celebrate the road re-opening than the earthquake anniversary, and people liked that the ‘earthquake stigma’ was associated with Kaikoura, and not Cheviot.

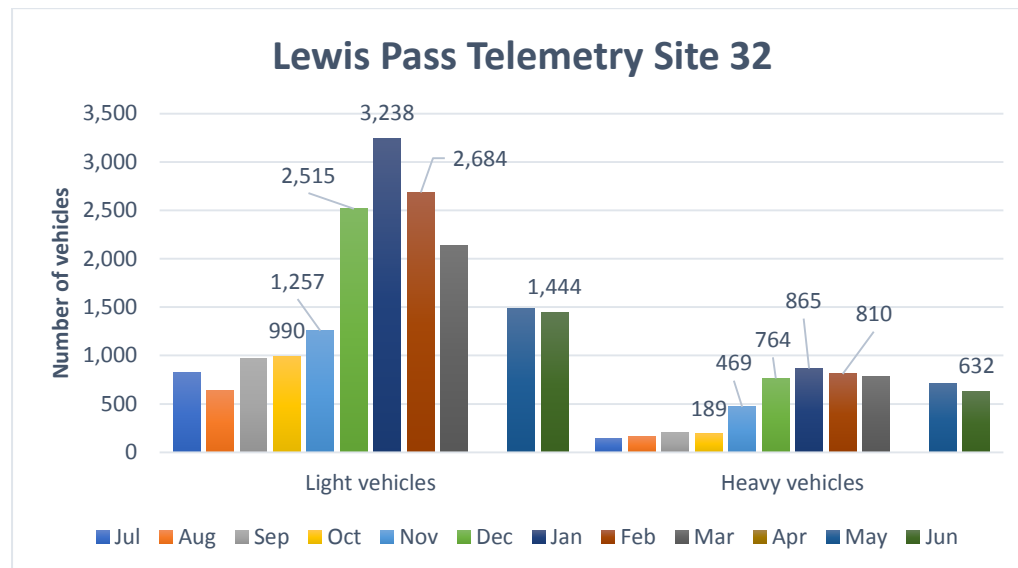
Hanmer Springs

At the 2103 Census, Hanmer Springs had a population of 840 people but, as Table 12 showed, 59% of dwellings in Hanmer Springs were unoccupied on census night suggesting a high number of holiday homes. In addition to the Thermal Pools, Hanmer Springs also offers a variety of mountain biking and walking trails and access to the surrounding conservation areas of Hanmer Conservation Park and Hanmer Forest Park. Two unpaved summer-only routes are open to travellers: one follows the Rainbow Valley, passes the Rainbow Ski field road, and joins SH63 to the east of St Arnaud; the other travels through Molesworth and the Awatere Valley and joins SH1 to the north of Seddon.

The road to the Lewis Pass (SH7), from which Hanmer Springs is accessed, was also much busier post-earthquake. Figure 14 shows the daily average vehicles by month for the year ended June 2017. While much of the increase in light vehicles is associated with the summer international

tourism and domestic holiday traffic, the increase in heavy vehicles, from 189 in October to 764 in December, represents a 304% increase after the November Kaikoura earthquake. As noted, heavier traffic volumes have slowed journey times down significantly, including for those visitors turning off SH7 to Hanmer Springs before the Lewis Pass. Since the closure of SH1 the Lewis Pass road has been closed multiple times as a result of road accidents.

Figure 14 Lewis Pass traffic count data (Year ended June 2017)



*No data were available for April

Data source: <https://www.nzta.govt.nz/resources/state-highway-traffic-growth/>

The 12km access road to Hanmer Springs (SH7a) suffered slips and rockfall as a result of the Kaikoura earthquake, delaying Christmas holiday traffic (Fletcher, 2016). Post-earthquake, visitor numbers to Hanmer Springs fell, despite the village suffering minimal earthquake damage. International tourists were still arriving, but it was reported that quake-weary Christchurch residents were staying away (Cropp, 2016b). Patronage at the Thermal Pools dropped by 60% in November 2016 and a government assistance package to market the area was announced (AAP, 2016).

Scoping trip notes

We spoke with the Chair of the Hanmer Springs Community Board. There are approximately 800 holiday homes in Hanmer Springs and tourists getting 'stuck' in town are a concern; this is usually due to weather events. The resident population are not particularly elderly, as there is a perception that they need to leave once they get more dependent on primary health services. There are, however home support services and the Health Centre keeps a list of vulnerable patients. Many residents are only there for six to ten years and buy businesses in town. One impact of this is a fluctuating school roll. Hanmer Springs has a lot of clubs and groups, creating multiple layers of connectedness. Our informant estimated that there would be 100 WHS visa holders working in Hanmer at a time, with most of these working in hospitality (rather than agriculture). Hanmer Springs is a more expensive place to live than other rural centres, so it

does not attract many unemployed people²⁴. A pool of rented houses is used to house the WHS visa holders; some people have bought houses to convert to employee accommodation. Estimate that 600 people who live elsewhere own property in Hanmer Springs.

In summary, it was noted that the town has an 'artificial population' which comes with an obligation to 'look after ourselves'. Also, they are hosts and there are 'duties' associated with that role in respect of the welfare of any visitors who might be present when an emergency event occurs. However, as most of their visitors are from Christchurch, they are easy to manage as they 'know how New Zealand works'.

In respect of hazard events, they are vulnerable to snowstorms and access is key. Civil Defence is strong, but personalities can get in the way; it is also the 'least sexy' of the services and struggles to get volunteers. At the time of an emergency Civil Defence can only expect to pull in two-thirds of the available team, but there is a core group of key people such as the school principal, the local digger contractor, someone from the hot pools, who represent a variety of population segments and who can offer contact points. Facebook was used in the earthquake response, but it was difficult to keep messages at the top of the page. Civil Defence needs to have high profile and be visible. Following an emergency event, they do a 'door-knock' around town that captures a lot of people. The important things in respect of community resilience are connectedness, key people and personalities.

The changes in the roading post-Kaikoura earthquake have made the local roads much safer as there are more police, lowered speed limits and the volume of traffic is such that people do not speed as much as previously.

Waiau

The Waiau settlement is a rural centre (2013 Census pop. 261) and provides a number of services for the surrounding farming community. Waiau has a Volunteer Fire Brigade with the Civil Defence Sector Post located at the fire station and the Welfare Centre located at the school. The Waiau School (Contributing, years 1-6 had a roll of 50 pupils at 1 July 2016); students move on to either the Amuri Area School (in Culverden) or to boarding schools for later years schooling. The Health Centre serving the Waiau population is located in nearby Rotherham, while there are police and ambulance services based in Culverden (22kms away).

Farming around Waiau is still traditional sheep and beef (rather than dairy) and, as a consequence, there are fewer overseas migrants than found elsewhere in the Hurunui District. At the 2013 Census, 8.6% of the Waiau population were born overseas compared with 15% in the Hurunui District. European/Pākehā and Māori were the only ethnicities recorded on the Waiau School roll. While often visited pre-earthquake by tourists using the Inland Route (as part of the Alpine Pacific triangle) there is no formal visitor accommodation in Waiau except for a motor camp. There is some farm-based accommodation in the surrounding rural area. A weekly newsletter – *The Waiau Citizen* – is published by the Waiau Citizens Association.

As noted, the epicentre of the November 2016 earthquake was closer to Waiau than to Kaikoura and the small settlement of Waiau was significantly affected, with widespread damage to

²⁴ At the 2013 Census the median weekly rent paid in Hanmer Springs was \$260. This compared with \$190 for Hurunui District. According to the 2013 Census data Hanmer Springs had an unemployment rate of 2.9%, compared with 2.5% in Hurunui District.

houses, farms and community infrastructure. There were 17 red- and 13 yellow-stickered buildings²⁵ in the township along with damage to the swimming pool, church, local pub and netball courts (Hayward, 2017b). The rural water supply was also damaged (Ineson & Salmons, 2016). In the days immediately after the earthquake, tensions erupted in Waiau as national Civil Defence restrictions blocked rural residents' access to their own properties (Broughton, 2016). A November 2016 news report noted residents' concerns about how Waiau had been 'forgotten' in favour of Kaikoura (immediately post-earthquake) and how it would be affected by extra Kaikoura traffic while SH1 was being repaired (Mitchell & Sherwood, 2016).

Accommodation shortage was a significant issue in both the Waiau settlement and the surrounding farms. In March 2017, a local Waiau shearing business (which employed up to 50 shearers each season) reported difficulties housing their staff (Cook, 2017). In July 2017, temporary earthquake accommodation, relocated from Christchurch, was available to Waiau and Hurunui residents who had lost their homes (Hayward, 2017f). An earlier media report, however, had noted some residents' concerns about erection of temporary accommodation in Waiau and its use afterwards (Dangerfield, 2017).

Scoping trip notes

We spoke with the Chair of the Amuri Community Committee. Waiau has a very close-knit community (which extends area-wide) and events like the earthquake are perceived to have brought it closer together. The Waiau rural area has established sheep and beef properties, rather than the dairy farms found around Culverden. As a result of this, the Waiau area has a very stable population; while the dairy farmers present a stable base, dairy workers are much more transient.

When the earthquake occurred the most significant thing was that the 'wheels fell off once national Civil Defence took over'. Locals and the rural community in general was perceived to be able to look after itself – they have the skills and the tools. There was a perception that people from Christchurch didn't understand rural people. It was also noted that the Kaikoura earthquake itself was much bigger than any of the earlier Christchurch earthquakes. Some people in the Waiau community had moved from Christchurch (post-earthquake) and estimated that the Kaikoura earthquake was 60 times worse than the Christchurch earthquake. Once contractors came in under national Civil Defence they were perceived to be 'just clicking the ticket' by ripping up roads unnecessarily, whereas damage to irrigation pipes means that, even now, there are still things that need attention. It was a double-edged sword, as local contractors were really busy while 'outside ones were coming in at much higher prices'.

In the immediate response period, the local Civil Defence system and the council were seen as outstanding. The local fire crew checked all houses in the area and the local camping ground was checked. Crews checking bridges encountered any freedom campers in the area and our informant suggested that freedom campers 'take their chances'. Also, with the roads not open it removed the issue of transient people being in the area at all. As Waiau is not on a main transport route (i.e., unlike settlements along SH1) so it was not all that busy prior to the earthquake. There is now more traffic on the Leader road.

²⁵ No data are available on the total number of buildings in Waiau, although at the 2013 Census there were 123 occupied dwellings and 15 unoccupied dwellings.

All volunteer organisations expect volunteers to reach certain minimum operational standards at their own cost and time, which is a 'sign of the times we live in'. All small subsidiary groups now answer to ward committees (rather than directly to council), which has given council the opportunity to abstain from health and safety in those areas. This meant that Waiau 'missed out' compared with Kaikoura, which is administered at district council level, rather than as a ward. In an emergency situation, there is no such thing as designated roles in the community – 'people just take it on and other people help them when they see the lead being taken'. In Rotherham, Barney Beaven (the 'Rotherham Mayor') is seen as the driver of their success.

Their earthquake experience highlighted the importance of having adequate fuel stocks in place when an emergency event occurs. There was not enough fuel in the Waiau area when the earthquake struck, and they used more than usual checking up on people. Access to generators was another issue as, in the immediate response period, they needed many more than were available. However, these were mostly needed around the homes in the Waiau settlement as most dairy farmers had their own. Farmers also have a lot of big equipment/gear and most people in rural houses have a big log fire or a fire that can cook on, heat water on. Most farmers also had barbeques and gas bottles. In five days they had it 'all sorted' – it would have happened in three days without the national services. They had to have access (post-hazard event) – that was compromised at day four – with roadblocks etc, and was deemed 'ridiculous' from the point of view of the locals. They had natural obstacles rather than man-made buildings (to negotiate). The key personnel were already there, with some already active in volunteer organisations and others who 'came out of the woodwork'.

Rotherham

Rotherham is located 10.4kms from Waiau and is part of the Amuri Area Unit (2013 Census pop. 1,644). The Meshblock containing most of the Rotherham dwellings had a CURP of 48 people at the 2013 Census. The Rotherham School (Contributing, Years 1-6) draws pupils from the surrounding area and had a roll of 36 pupils (1 July 2016). Similar to Waiau, students move on to either the Amuri Area School (in Culverden 11.8kms away) or to boarding schools for later years of schooling. As a result of more dairying around Rotherham (and Culverden) than around Waiau, the Rotherham School has a more mixed ethnicity in its roll. Some local community groups (e.g., Rural Women) have initiated migrant support services in the area. In recent months there have also been a number of temporary workers, based in and around Rotherham, installing a new irrigation scheme. As noted, the Amuri Community Health Centre (which also serves Culverden) is located at Rotherham. The nearest Civil Defence Sector Post and Welfare Centre locations are either in Waiau or Culverden. Police and ambulance are also located in Culverden.

Some of the roads around Rotherham were damaged by the earthquake and the settlement has been impacted in the same way as Waiau in respect of increased traffic as a result of SH1 closures. Overall, with newer housing stock Rotherham fared better in respect of earthquake damage than did Waiau. The Rotherham pub was able to offer accommodation to response workers immediately post-earthquake (Salmons, 2017). We talked to one of the staff members

of the Rotherham pub who was active in the local branch of Rural Women and on the Rotherham School board.

Scoping trip notes

The dairy industry is a big employer in the area and employs a mix of temporary workers and 'newcomers'. There are also some itinerant shearing gangs working around the area. There are a high number of overseas migrants (Filipinos and Fijians) who need social assistance. Isolation can be an issue (in part because many new migrants do not drive) and moving into the district is harder for migrants who do not have children (i.e., they do not connect to the community through the school). Temporary workers (such as those working on the irrigation scheme) are less integrated into the community. Employers and contractors tend to look after their workers. WHS visa holders are around during spring and are also looked after by their employers. Rotherham has a freedom camping area and had some tourists staying overnight pre-earthquake; this has probably increased with the post-earthquake traffic volumes. The Rotherham pub has accommodation and there is also a motel in Culverden that caters to passing truck drivers. Many of the resident Rotherham population work in Culverden. There are some displaced Christchurch people in the community and they have integrated well. There was a suggestion that this may be because Rotherham is more diverse than other farming communities in the area, and are therefore more accepting of new people.

General rural issues were reported in respect of attracting staff for both the medical centre and school. The school gets special funding to help with ESOL students. Many migrants belong to church, although the Filipinos have their own church, while local church attendance is dwindling. The Rural Women host a welcome event each year for newcomers and issue *Welcome to Amuri* packs to newcomers. Two different packs are available (for overseas people and New Zealanders). These packs contain material of interest to both employers and employees. With many services allocated on a population basis, it is difficult in areas with low population density and it can be difficult to get enough volunteers from the local community.

There appeared to be some resentment post-earthquake with the role played by outsiders (who did not understand rural people) and some thought that systems could be improved by removing some of the red tape and allowing locals (who were good) to just 'get on with it'.

Marlborough District

Marlborough District stretches from the Marlborough Sounds to the north and east, west down the Wairau Valley to the St Arnaud Range; its southern boundaries stretch south to Willawa Point (just north of Kekerengu on SH1) on the coast, and inland into the Amuri Range (near Hanmer Springs). The district is known for its wine production with vineyards concentrated around Blenheim, Renwick and the Awatere Valley. Marlborough is New Zealand's largest wine producing region. A Marlborough viticulture labour market survey in 2016 estimated the region's wine industry, worth \$1.2 billion in export earnings, will employ 10,300 people, up from 8300, by 2020 (Watson, 2017). Further south and west sheep and cattle farming predominate. Irrigation and water are an issue and the district has experienced a number of drought years. Fishing and mussel farming are also important. The region has diverse landscapes (including marine and mountainous areas and extensive vineyards). There are visitor services throughout the region with many visitors attracted by 'wine tourism'. The Marlborough Sounds host numerous holiday homes and are popular for a variety of recreation and tourist activities. Picton is the seaport for the interisland ferry and also hosts some cruise ships each year.

Communities across the entire Marlborough District were affected by the earthquake with widespread damage. The main impact was to buildings, farm assets including roading, horizontal infrastructure, river control works, the transportation network (road and rail) and the water supply in Ward. Ward experienced the highest peak ground acceleration rates in the South Island (up to 0.9G during the shaking). The earthquake damaged infrastructure on vineyards and caused property damage in the southern Marlborough settlements of Seddon and Ward²⁶.

A District Recovery Plan, put in place after the earthquake, contains a comprehensive description of recovery structures and outlined the following recovery goals:

1. Hardship is minimised, and well-being enhanced for individuals and communities who have suffered losses or damage as a result of the earthquake.
2. Local, national and international confidence is maintained in the region as a place to live, work, visit, invest and do business.
3. Recovery efforts are credible, effective and are supported by robust and transparent processes and systems.
4. Recovery actions are affordable now and into the future for the Marlborough community.
5. The people and organisations of Marlborough and the National Recovery Manager maintain confidence in the local recovery process.
6. Recovery actions improve the resilience of communities and infrastructure to future events (MDC, 2017, p.2).

The Marlborough District has been significantly impacted by the closure of SH1 and the rail link south. While the majority of traffic is using the alternative inland route south to Christchurch SH1 is open as far south as Clarence where, as noted previously, a temporary camp was established to house workers and facilitate the east coast corridor road and rail repairs to the north of Kaikoura. These workers have also provided welcome business post-earthquake to the settlements of Seddon and Ward; a Clarence resident established a food truck to cater to these

²⁶ The Seddon area had previously suffered extensive damage from a number of earthquakes; the most significant of these were a 6.5Mw one on 21 July 2013 and a 6.6Mw one on 16 August 2013. Seddon also experienced several earthquakes of around 5Mw in January and February 2017.

and other contractors working on SH1 (north) (Kitt, 2017b). The communities of potential interest for this research are Blenheim, Seddon and Ward.

Blenheim

Blenheim (2013 Census pop. 24,957) is a large service town and in addition to a number of primary schools has two secondary schools and a campus of the Nelson Marlborough Institute of Technology (NMIT). The town is an important service centre for the horticulture and viticulture industry and the population is boosted by the year-round presence of RSE workers and more seasonal influxes of WHS visa holders. A number of accommodation centres have been established to house these semi-permanent and temporary residents.

The Marlborough District Council (MDC) – which is a unitary authority – has offices in both Blenheim and Picton. We were unable to arrange a meeting with a council representative and instead met with the Manager of the Marlborough Migrant Centre.

Scoping trip notes

Marlborough is becoming much more ethnically diverse as a result of in-migration. Between the previous November to May period the Migrant Centre had 456 new and repeat contacts, representing 47 different nationalities. There are also a significant number of transient population groups working in Marlborough, including RSE workers and WHS visa holders. The Migrant Centre was established to provide ‘settling in’ assistance for both migrants and the host community and was deemed necessary because some government departments are not represented in Blenheim. The Migrant Centre was initially funded by MSD and then transferred to the Office of Ethnic Affairs. This transfer reduced funding significantly and they now get some funding from council grants and some from ‘the usual community grants’. Their services are concentrated in Blenheim region and particularly around Awatere and Seddon, but their mandate is not to support transient people, such as those employed on the RSE scheme.

The RSE workers are distributed around the area and the RSE scheme has some in-built pastoral care although it is perceived that there is still room to improve things. The Migrant Centre does support those who do form relationships (with permanent migrants) but for most RSE workers there is no pathway to residence. They don’t tend to have any refugees, but noted that ‘needs are the same as for all migrants’. Most migrants find the centre via word of mouth. Multicultural challenges are different when there is only one primary migrant group (e.g., quite different in Waiau with only Filipinos). In Blenheim it is the rate of change that is challenging.

At time of earthquake the advocacy support that was needed was significant, as many new migrants are socially isolated (i.e., no friends or family) and are deemed to be very vulnerable. The Migrant centre has put a lot of support and education in since the earthquake to meet the needs of the migrant community. Some of this has been peer support, as being helped by others of the same ethnicity is good, particularly as stress affects people’s English speaking ability.

The Migrant Centre also offers educational and intercultural awareness training which is important for host community. Education activities involve talking to different organisations and individuals around benefits that newcomers bring; events are also important for integration with the host community. For migrants there is a newcomer’s network that is purely social. Churches are a ‘big cog in the wheel’, although new faith groups are ‘a new ball game’ for the host communities.

Seddon

Seddon (2013 Census pop. 507) is designated as a rural centre and is located only 25kms from Blenheim, close enough to act as a feeder settlement (and vice versa) for employment and services. Seddon acts as a small service centre for the Awatere Valley vineyards and the settlement hosts a significant number of RSE workers. There are a number of retail outlets (including a small supermarket and several cafés) although the local hotel – the Starborough Tavern – closed down in September 2016 (Lewis, 2016a). Seddon has a full primary school (130 pupils) which also serves as the Emergency Response Centre.

There was considerable concern in Seddon when they were 'left off the list' of earthquake-affected communities qualifying for wage subsidies after the earthquake; the reason given was that Seddon was more connected to the broader Marlborough economy and less dependent on the highway than neighbouring Ward (Lewis, 2016c).

The Awatere Community Trust provide social services and support services in Seddon. They operate the Awatere Information Centre (also in Seddon) and publish the *Awatere & Flaxbourne Bulletin*, a free local community publication. We spoke with a representative of the trust.

Scoping trip notes

The Seddon community has four main population groups – elderly, family with school children, RSE workers, non-children households. They maintain a paper map of the community showing each property with coloured stickers to indicate its occupant type (see Figure 15). The 120 children at the school were mostly 'rural kids'.

Figure 15 Seddon community map



Photo credit: Jude Wilson

The occupants shown in purple on the map are couples without primary school children, of whom around 80% work locally; others work in Blenheim. They were expecting that in three years there would be less purple and more orange (RSE workers) on the map. The Seddon Hotel had closed down and was housing RSE workers and applications had been made to house 108 and 60 workers on that site and one other, respectively. There is also a substantial new development in Blenheim for RSE workers. In addition to approximately 500 local residents, Seddon is home to more than 500 RSE workers with these two populations described as 'two different communities'. The church integrates people to some extent while sports events have been tried, but had not worked in respect of integration. The first year was extremely difficult in terms of getting RSE workers used to living there because of accommodation overcrowding etc.

Our informant suggested that, while the RSE workers' adjustment to living in New Zealand has improved, in other ways it is more difficult to host this group now because the RSE workers 'think they have rights'. Their behaviour is dependent on strength of their pastoral care person (appointed by contractors) and the 'good ones are well looked after'.

There have been and are a number of other transient workers in Seddon at different times. Some WINZ referral workers have been sent to employment positions in Seddon in the past – originally 20-30 were sent, but there were only three were left after a month. There are WWOOFERS on some farms, but our informant was of the opinion that most WHS visa holders expect to be paid for work. Many of these WHS visa holders were working on vineyards in the area and stay in either rental housing or on private property. These groups tend to stay longer in the area than freedom campers. Post-earthquake, they have had very few road workers staying in the town mostly because there is no commercial accommodation.

Prior to 2013 earthquake in Seddon they thought that rural people would be better prepared and more resilient (than town ones), but that was not the case. After the 2013 earthquake the trust set up emergency repair help, plumbers, electricians, glaziers etc. After the Kaikoura earthquake, the Seddon township faltered because income stopped. Small businesses had no capacity to weather the storm and Seddon was not included in the package of government help²⁷. A significant amount of practical assistance and emotional support was needed and was provided by the Red Cross and 'community navigators'. These navigators went door-to-door to check on needs around winter heating, emergency repairs etc. The primary health organisation (PHO) funded two of these and there were also two Maori ones.

What annoyed people was that this time 'government threw money through Red Cross, farming organisations, and so on, but nothing was actually being done'. They were telling stories over and over with no actual help, whereas the navigators worked on a more personal note. However, there was no one person or entity with oversight.

They did learn from the 2013 Seddon earthquake when many houses had been damaged and local response had been a 'shambles'. In 2013 the council and Civil Defence maps did not even align. Regular training for Civil Defence people has been set up since 2013. The school is the Civil Defence headquarters and the MDC sends a first response team out. They have two networks; the township one is based on neighbourhood watch system, whereas in the rural area they have a network with a team leader – they look around the immediate area. The hardest people to get to in the community are those without email or internet. The networks are set up for fire and worked well – the Fire Brigade was on the street immediately. It was reported that it doesn't matter how much information people are given as they only take in what they are ready for. In an emergency event, the most important things are having communication channels organised and having a safe assembly point arranged. It is easier to break down assistance into smaller groups and Seddon town was a good size to manage as a community. They have the *Bulletin*, Facebook page, township and rural networks (which together, cover 80-90% of people). Information can be easily channelled through the school. The RSE workers are perceived to be responsible for themselves (within the community), but people do need to know the point of contact.

²⁷ Although the local paper suggested that they did get some free health care services post-earthquake, these were due to stop at the end of August 2017.

Ward

The Ward settlement, located 45kms south east of Blenheim on SH1, contained 108 people with 42 occupied dwellings at the 2013 Census (MB 2309600) and forms part of the large Ward Area Unit (2013 Census pop. 930). The surrounding area is primarily pastoral (sheep and beef) farming. The single largest employer in Ward is Burkhart Fisheries, a commercial cray fishing company whose operations were severely compromised by the seabed uplift at their Ward beach launch site (Lewis, 2017d). The local pub (the East Coast Inn) and the Flaxbourne Museum were also damaged by the earthquake and forced to close. Ward School is a full primary school with a roll of 37 pupils and serves as the Emergency Response Centre. There is also a café and petrol station, although post-earthquake has been challenging for these businesses with the only passing traffic being road crews. The Ward Motel, which was suffering with the closure of SH1 (north) has been housing some of these crews (Lewis, 2017b).

The Flaxbourne Settlers Association is the community group representing Ward residents. We spoke with a member of this group.

Scoping trip notes

There are around 120 homes in the Ward settlement. The Ward School has 39 students from 29 families and has three fulltime teachers and two extra 'earthquake relief' teachers. The children go to Blenheim for high school. The current teachers live in Blenheim and one lives in Picton (74kms away). Police are located in Blenheim, but the community constable comes out once a month. They look to Blenheim for services, although for sports they look south to Kaikoura (84kms away pre-earthquake when SH1(north) was open). The MDC partially funds the Flaxbourne Settlers Association who also do some independent fundraising. They look after the public toilets, mow roadsides etc.

Burkhart Fishing can only use smaller vessels, cray fishing is seasonal. They have a factory in Ward and employ approximately six workers. The same people also own the petrol station. There have been changes on farms in recent years. They do have some RSE workers, but they travel from Blenheim each day and do contract work – 'gone are the days that farmers brought people in and housed them'. They have a local shearing gang in Ward – there is also a Seddon shearing gang. There are sometimes WWOOFERS working in the area. Future development will depend on water.

Ward has been very well supported post-earthquake. The winter is usually very quiet, but the Ward Motel has been full with road workers/contractors. There were some empty houses, but they have been fixed and are now rented. Ward residents are 'loving the quiet road' and most of action is related to the road repairs. There is a road worker camp at Clarence (at the old school), farm cottages, some workers/contractors travel from Blenheim. The earthquake has been a godsend for Ben at Clarence River Rafting as he is now running the worker bus.

When the earthquake happened, they had a Civil Defence post, but had no person to coordinate the response. Familiarity with the community helped one of the locals to take charge. They had no cell phone cover, but the school became a focal point for people to assemble. There were some visitors to the area – 20 people turned up at the school initially and then as time went on more people arrived. They do have a Rural Fire Brigade and the 'plan was to try and account for all of our residents'. Local knowledge is important for the fire brigade. Help also came from outside with the arrival of the Seddon Fire Brigade and police. Then a train driver, some truck

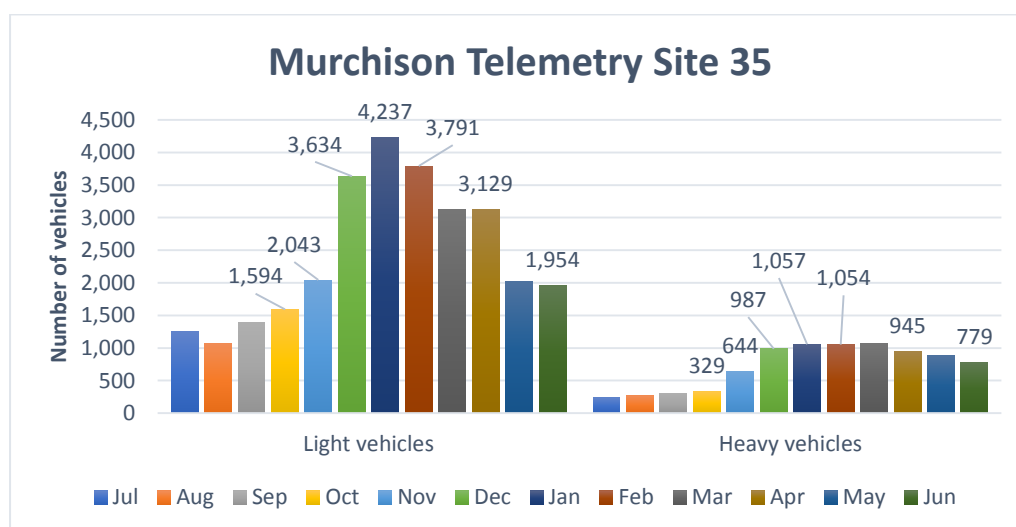
drivers and people in cars (from further away) also arrived at the school. People were allocated streets to go and check on the residents; assumed that more remote people were able to look after themselves. The land owner next to the beach was able to check on anyone camping there. When the earthquake happened there were six walkers on the Cape Campbell walkway and there was some miscommunication as to where they were, but the nearby farmers had checked on them.

Overall, they 'relied on own systems to check on those in our care'. Ward is a small tight community and there is no new development and it is 'all still within our control'. It would, however, be good to have an up-to-date register of people (keeping phone numbers up-to-date etc). There was a perception that the council system with colour-coded stickers (indicating the damage status of each property) didn't work.

Tasman District

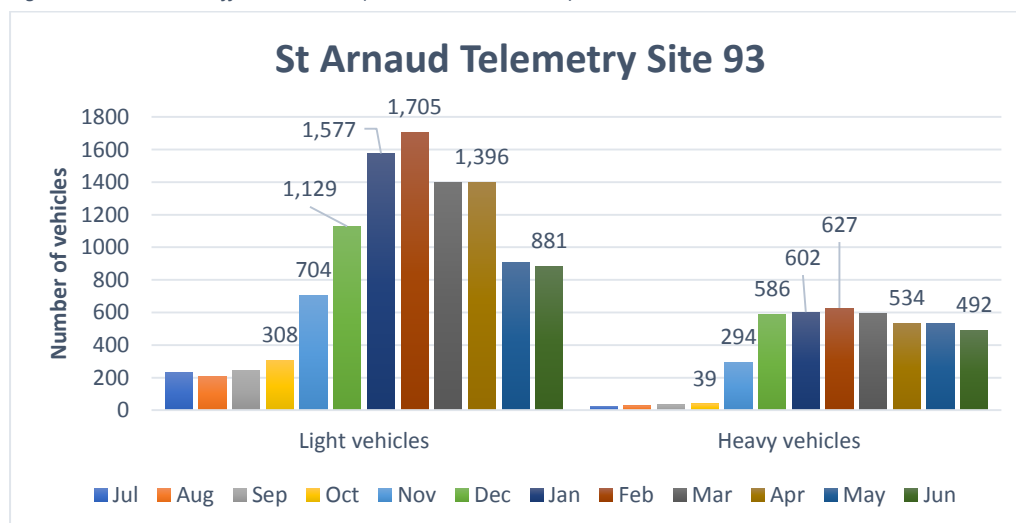
The Tasman District stretches from Nelson city in the east and is bounded by the Matiri Ranges, Tasman Mountains and the Tasman Sea to the west, Tasman and Golden Bays to the north and the Victoria Ranges to the south. There is some sheep and beef farming in the area as well as extensive areas of forest in the Richmond and St Arnaud Ranges (some of which are commercial and some conservation). The Mount Richmond Forest Park contains some commercial forest areas on public land. The region is home to three national parks: Abel Tasman, Kahurangi and Nelson Lakes. These conservation areas are popular with outdoor recreationists, while the Buller River is used for many water sports (kayaking and rafting). The southeast corner of the region, traversed by SH63 and SH6 passing through the settlements of Murchison and St Arnaud is the area of interest. Traffic on this route has increased significantly with the closure of SH1 (after the November 14 Kaikoura earthquake) as it provides the only land link between Picton and Christchurch. Figures 16 and 17 show the daily average (by month) of light and heavy vehicles (measured at the Murchison and St Arnaud Telemetry sites) for the year ended June 2017.

Figure 16 Murchison traffic count data (Year ended June 2017)



Data source: <https://www.nzta.govt.nz/resources/state-highway-traffic-growth/>

Figure 17 St Arnaud traffic count data (Year ended June 2017)



Data source: <https://www.nzta.govt.nz/resources/state-highway-traffic-growth/>

There was considerable concern around the impact this increased traffic would have on the local communities, alongside some longstanding safety concerns associated with traffic on SH63 (Hayward, 2017c; Bell, 2012). Businesses and communities located on this 'alternative route' reported being very busy in the weeks immediately after the earthquake, especially as this coincided with the start of the busier summer season and there was some pressure on services (Leov, 2016a; Meij, 2016; Matthews, 2016). The Murchison Information Centre brought forward their opening day (Sivignon, 2016a). New toilets and rubbish bins were installed at St Arnaud in expectation of busy summer season, along with a truck stop at Murchison (Sivignon, 2016b). A report published in mid-January 2017 noted that the alternate route to Christchurch from Picton had stood up well to holiday traffic, although it had required extra road policing officers from Marlborough, Nelson and the West Coast (Eder, 2017a).

While the majority of later reports have noted continuing benefits to local businesses (Meij, 2017) there have been a number of issues reported. Emergency services located along the alternative route, for example, have struggled to cope with the surge in call-outs (Long, 2017), while drivers were reported to be wary of travel along the 'white knuckle highway' (Leov, 2016b). Safety issues with the turn-off to a roadside food truck located alongside SH63 forced the operator to close for a period (Kitt, 2017c); the truck had been operating without incident for two years (Kitt, 2016). Eventually NZTA offered financial assistance towards the roading upgrades required (Kitt, 2017d). Another article reports on a number of stresses in the Murchison community six months on from the earthquake (Hayward, 2017d).

Murchison

Murchison (2013 Census pop. 492) is a rural centre located on SH6, the main route connecting Nelson to the West Coast and lower South Island. The closure of SH1 significantly increased the amount of traffic passing through Murchison, as Figure 16 shows. These data show a summer increase in light traffic from 1,594 in October to 3,634 in December (a 128% increase) while heavy traffic increased by 200% (from 329 to 987) over the same period. As noted, there have been some concerns around pressure on the Murchison community as a result of this increase (Long, 2017).

Murchison is the most southern settlement in Tasman District and serves a mixed farming district (i.e., dairy, sheep and cattle). The settlement hosts a wide range of retail services including a supermarket, butchery and pharmacy and provides a variety of rural contractor services. The Murchison Area School (Full Composite) has a roll of 134 pupils. Located at the confluence of the Buller and the Matakita Rivers, Murchison is the central base for many outdoor activities in the surrounding area, including rafting and kayaking, tramping, hunting and fishing, and historic gold trails. There are a range of visitor services available in the settlement. Community services include a small Tasman District Council (TDC) office (which also provides a public library service) and a Volunteer Fire Brigade Station. In the event of Civil Defence emergencies there is a local emergency operations centre in Murchison.

The Murchison Historical and Museum Society Inc. publish a local newsletter, the *Murchison News*. Residents are represented at council by the Murchison and Districts Community Council. We spoke to the Chairperson of this council.

Scoping trip notes

The earthquake created huge work demand in and around Murchison with a lot of road workers based there. The information centre was struggling financially because accommodation was taken by road workers (no booking fees for short term guests). Fulton Hogan had taken a lease in the hotel to accommodate their men, suggesting that they must be expecting to be in the locality for some time. Some Murchison businesses tried to get staff from Kaikoura, but no one would take up the jobs offered. There is an elderly population in the town.

In the recent past there has also been a huge change in agriculture in the surrounding area, as beef and sheep farms converted to dairying. This has brought a transient population, some from overseas, some not. They do not tend to be people that participate in local organisations. Many are Filipinos, who are perceived as being quite a shy people and who tend to socialise together. Their lack of integration is thought to be in part related to language difficulties, although it 'probably helps if they have children in school'. Our informant was not aware of there being formal assistance for them (Rural Women – who offered migrant assistance in Rotherham – were reported to be very elderly in the Murchison area).

The Murchison School roll is quite volatile (e.g., 220>100>150 over recent years) and a new kindergarten opened this year creating three to four jobs. Older children from farms often go to boarding schools rather than to the local Area School. They have a small hospital (Health Centre) in Murchison. They have two permanent police in town and some 'extras' doing road policing. While there is potential for the population to grow there are zoning restrictions around the amount of land available for housing. The cost of land is high (with levies the same across the whole of Tasman District) and they feel that they are not fairly represented in council. As our respondent noted, their 'rural (Murchison) voices are very small – it's us versus Richmond'.

The Murchison visitor numbers have grown a lot in recent years. Visitors are attracted by adventure tourism activities such as kayaking, rafting, jet boating and a heli business is about to open. People in Murchison are staggered at size of change as a result of the SH1 closures, especially because it occurred at the normally peak Christmas travel period. If there are WHS visa holders around they are probably working in hospitality in the town rather than on farms; 'to be any use on farms would need some experience'.

In the event of an emergency, the elderly in the community were assessed as being the most vulnerable, but they are checked on. That is the advantage of having local knowledge. The locals also know the freedom campers' spots, which are not necessarily the best ones if anything happens (e.g., they often camp beside rivers and bridges). Personality is important in the community. They do advertise for volunteers, but struggle to get them. It is often the same people involved in all the different services (e.g., fire, Civil Defence, St Johns). People living outside the town often can't get in quick enough, or have no cell cover if there was to be an emergency. Road accidents have increased as a result of the traffic changes, but not all that much has changed for the majority of Murchison residents. They organised a meeting on the Friday after the earthquake to try and pre-empt issues (e.g., speed limits, truck parking, rubbish, trucks – around town issues – toilets). Some concerns that ratepayers would have to fund extra toilets and perception that NZTA should be responsible. Overall, residents had coped very well, helped by having welfare things in place in their planning. The sport and recreation centre acts as a welfare centre and can look after people. They are trying to buy a generator for the centre to use.

The traffic is not expected to die off all that quickly and there is not much talk in the town about the reopening of SH1 (north). While container trucks might take the coast road, many others were still expected to travel on the inland Murchison route. Even if the traffic were reduced, in the longer term the roads around Murchison are perceived to require ‘serious upgrades’ such as, for example, replacing one lane bridges and the construction of more passing lanes.

St Arnaud

St Arnaud is located on SH63 approximately 100kms from Blenheim and is adjacent to the Nelson Lakes National Park. According to Tasman District Council data²⁸ the St Arnaud residential area contains 250 dwellings, but only 45 ‘households’, reflecting the high proportion of holiday homes in the area, many of which remain empty for much of the year. At the 2013 Census, the CURP of the two meshblocks that represent St Arnaud was 103. The Lake Rotoiti School (Full Primary) had a roll of 32 pupils in 2016. There are a number of commercial accommodation premises and several cafés, a small shop and petrol station at St Arnaud along with Department of Conservation offices and a Volunteer Rural Fire Service station.

Traffic passing through St Arnaud (Figure 17) has increased significantly – between October and December heavy vehicle traffic increased fourteen-fold (from an average of 39 to 586 per day) and light vehicle traffic increased from 308 per day to 1,129 (up 267%) (Figure 17). The increase in cars, however, was seen more positively than the increase in truck traffic. The St Arnaud school principal expressed concerns about road noise and staff were monitoring their pupils more closely, with road safety messages also being reinforced (Leov, 2016b). A later report noted that increased traffic on the full length of the alternative route (including SH63) had not been the nightmare envisaged (Eder, 2017a). Prior to earthquake and the subsequent increase in traffic volumes SH63 was perceived to be a dangerous route (Bell, 2012).

Businesses in St Arnaud also reported some positives, with the café and shop employing more staff, offering an expanded menu and extended opening hours; commercial accommodation was also busier and many baches were being rented to road crews (Eder, 2017b). Another positive was that St Arnaud was ‘now on the map’ for visitors and there was some hope this raised profile might continue to be beneficial in respect of attracting visitors to the area.

Despite having such a small population there is an informative St Arnaud community website²⁹. Contact with a St Arnaud informant was arranged through the Lake Rotoiti District Community Council representative. This informant was described as ‘wearing many different hats in St Arnaud’.

Scoping trip notes

Their estimation of the permanent resident population is higher than suggested by census data although the differences may simply relate to where the settlement (and meshblock) boundaries lie. The Department of Conservation (DOC) is the biggest employer in St Arnaud and is closely involved in the community’s emergency response. Five of the DOC staff live in

²⁸ <http://www.tasman.govt.nz/tasman/settlements/st-arnaud/st-arnaud-plans/>

²⁹ <http://www.destinationnelsonlakes.co.nz/facilities-and-services.html>

Murchison because the tourism influence on house prices makes St Arnaud an expensive place to live. The village has a new subdivision which has attracted younger retired people, some of whom look after others' baches. People are attracted to the outdoor opportunities available in the area and correspondingly they come 'with skills'. There is a social group called Friendly Fridays which regularly attracts 70 people. In the area surrounding St Arnaud there is perceived to be a resilient farming community who look after themselves and others.

There can be a significant number of visitors in the St Arnaud area. The Rotoiti Lodge (which sleeps 70) hosts school trips and groups. DOC has two large service camps (together catering to 250 people) close to St Arnaud, with several smaller camp sites and 24 huts located in the Nelson Lakes area. People in the camps and in the back country are set up to be resilient (i.e., are used to being without power etc). There are also people staying in commercial accommodation. Around two-thirds of the dwellings are holiday homes with around half of the owners coming from Nelson and the other half mixed, but largely from Christchurch and Wellington. The baches area mix of private and commercial. Post-earthquake, Fulton Hogan had been using many of the baches to accommodate their road crews. The farm population is very stable population as there are not many dairy farms, although shearing gangs pass through the area.

There are a number of communities similar to St Arnaud around New Zealand (e.g., Arthurs Pass, Mt Cook, Te Anau, Glenorchy, Fox Glacier, Franz Josef). In these communities DOC culture encourages playing a 'whole of government role' when something happens. In an emergency, DOC are also directly responsible for some people (e.g., those in the conservation estate), but would be fully supported (by their national office) in helping others. DOC is often the 'last government department left in town'. Other services in St Arnaud include: petrol station, accommodation, shop, mechanic (located just out of town) and a generator dedicated to DOC. The DOC Visitors Centre becomes the Civil Defence headquarters (Sector Post) and nominally there is emergency equipment and supplies stored at the Fire Station. While they have no medical services, there are three people with pre-hospital emergency training and a number of baches are owned by doctors.

The location of St Arnaud on the alternative route (which travels along SH63) has had an impact on the community. There has been an increase in people making incidental use of conservation estate with numbers increasing in front country and there being more 'transients' around. The local DOC office has been pushing for another amenity ranger to assist with toilet cleaning and other maintenance. Kawatiri Junction was converted to a 'standard campsite' two years previously, as part of campsite upgrades to better manage visitors and collect some revenue. Most traffic incidents have been west of St Arnaud and they have not had the usual number of reports of people on the wrong side of road because of more one-way sections in place and more traffic. The shop went 'nuts with business' but they had not taken all their opportunities to 'make hay'. Our informant suggested that this was because a lot of St Arnaud people go into business for lifestyle, rather than purely economic reasons. The pressures of more people passing through have been noted in the increased use of the toilet facilities, but TDC are covering that. While they hear through the media that SH1 (north) will open in December, reports from Opus suggest that there is a lot of work in front them and they expect that SH63 to 'still be worked on' until at least mid-2018.

They do have conversations in Civil Defence about who they have in the population. While they were not directly impacted by the Kaikoura earthquake they are wary of other hazard events. They are well-briefed about AF8³⁰. Fire is a big concern and they do have a volunteer fire brigade. However, St Johns ambulance comes from Murchison (60kms away). In 2008 they had a massive snow storm.

³⁰ Project AF8 - Developing a coordinated response to an Alpine Fault rupture to assist and enhance community resilience across the South Island (<http://projectaf8.co.nz/>).

Rural communities

The nine communities visited during the scoping trip represented a range of community types and these can be described according to a variety of interrelated factors including: population size and demographic characteristics; spatial location, and associated isolation and access vulnerability; and, type of economic activity within the community and its surrounds. Together, they represent the diversity of rural communities that can be found in many regions of New Zealand. As noted in rural definitions section, however, Blenheim is too populous to be technically counted as rural, despite its high dependence on, and integral relationship with, its rural hinterland. Kaikoura (which was not visited) is also technically classified as urban (see Table 13).

The existence of a rural-urban divide was a strong theme in the scoping trip data and extends to include resentment towards 'outsiders' who arrive to offer assistance (and layers of red tape perceived as unnecessary) after an event such as the Kaikoura earthquake. Also, while this research takes the Kaikoura earthquake as an anchor (or focal event) around which issues of community resilience can be examined, it was impressed upon us that these communities have faced, and continue to face, many other significant environmental, economic and social challenges. Episodic droughts in North Canterbury and the threat of the Alpine Fault rupturing, employment shortages and global events affecting economic livelihoods are ever present.

The social and economic issues faced by the communities we visited are common to many rural communities (as the rural change and resilience literature showed) and were exacerbated by the earthquake. These include the struggle to maintain and fund community services and the problems of isolation and travel distances and time required to reach services. The departure of many young people, and an aging resident population more generally, have reduced the in-community capacity to maintain volunteer groups and services that are vital part of emergency management in rural areas. The presence of newcomers who are less integrated, or who are culturally different, presents additional challenges in respect of community resilience. In many instances, however, it appeared that individual employers, rather than the host community more broadly, were expected to take responsibility for looking after their 'staff' in emergency events. Although some transient worker populations, such as RSE workers, have pastoral care services and structures in place, the occurrence of a hazard event and the ongoing impact and disruption within the community may challenge the operation of that support. Likewise, when emergency events occur accommodation hosts may find themselves with much greater levels of responsibility for the guests in their care than is usual.

The difficulty of attracting and retaining workers to rural areas is widespread and is largely satisfied in Marlborough region by RSE workers, in Kaikoura by WHS visa holders, and in Hurunui by new migrants. A shortage of appropriate accommodation for these 'imported' (and often transient) working populations is also widespread and, in many areas, has been exacerbated by earthquake damage to property. The earthquake rebuild population is another group that increases demand for accommodation stocks, even in St Arnaud which was not otherwise affected by the earthquake.

There is considerable variation in the degree to which these new people integrate socially with the more permanent residents of the host community. Economically, however, these semi-permanent and temporary populations contribute in multiple ways to the local economy, as

they not only work in the locality, but also support local services by their (temporary) presence in the community. There may also be a wide range of transient population groups present in a community at any given time. These include both international and domestic tourists, traveling workers and the travelling public more generally (see Table 2). While all of the informants we spoke to had general awareness of most of these groups, they also acknowledged that – for many population groups – the host community had little idea of their numbers or exact location when the earthquake occurred.

Selection of case study locations

The collation of data describing the broader research areas and the population groups found within its communities, and the preliminary fieldwork were undertaken in order to identify four communities on which to focus in the next stage of the research. The goal was to represent variations in both earthquake impact and effect, and in community type (with a focus on transient population groups). A number of key features – relating to each community's settlement type, earthquake impact and community characteristics – were identified as being significant in respect of our research aim. These features are summarised in Table 14 and explained further below, along with the rationale behind the selection of Blenheim, Kaikoura, Waiau and St Arnaud (shaded in Table 14) as case study locations.

Settlement type

While population size alone provides a crude community measure, the size of the population determines the type of community services available and the degree to which volunteer services can be supported from within the community. Also, as both the literature review and the data collected during the scoping trip showed, population size can impact on the social cohesion and economic diversity found within a community. As Table 1 showed, classification by urban (or rural) area type is also based on population size. To a large extent, population size also determines the amount of support a community receives from its local government representatives (i.e., the council services, funding and attention it receives). While the Local Government Act ensures minimum levels of council governance and support, there can often be considerable variation between councils in respect of both institutional arrangements (within each council) and the structure of CDEM. These governance and structural factors will be examined in a separate report.

Based on these two key settlement features (i.e., population size and district of location) the four case studies represent a main urban area (Blenheim), a minor urban area (Kaikoura), a rural centre (Waiau) and a rural area (St Arnaud); the four case study locations are also located in four different districts.

Earthquake impact

The impact of the Kaikoura earthquake on these communities can also be assessed in two ways. The first is the obvious impact on the communities themselves (i.e., to buildings and infrastructure, etc) and these settlement impacts are classified in Table 14 according to four impact levels (severe, high, medium and low). Earthquake impact is generally able to be

Table 14 Case study selection factors

Settlement		Earthquake impact		Community characteristics	
Size (largest to smallest)	District	Settlements	Transport network	Population groups	Economic, spatial isolation & access vulnerability
Blenheim	Marlborough	Medium	Low	Permanent residents (new migrants) Semi-permanent residents (RSE workers) Temporary residents (WHS visa holders) Transient populations	Diverse economy Strongly connected to rural hinterland Self-sufficient community Good access and transport alternatives
Kaikoura	Kaikoura	Severe	High	Transient populations (tourists, holiday home) Temporary residents (WHS, holiday home) Semi-permanent residents (earthquake rebuild)	Tourism dependent (international, domestic) Access vulnerability Spatial isolation (high)
Hanmer Springs	Hurunui	Low	Medium	Transient populations (tourists, holiday home) Temporary residents (holiday home, WHS)	Tourism dependent (strong domestic) Some access concerns Spatial isolation (high)
Seddon	Marlborough	Medium	Medium	Semi-permanent residents (RSE)	Blenheim satellite (limited autonomy) Spatial isolation (low)
Murchison	Tasman	Low	High	Transients (transiting, tourists) Temporary residents (earthquake rebuild)	Farming community Located on key transport route Spatial isolation (high)
Cheviot	Hurunui	Medium	High	Semi-permanent residents (RSE) Transients (transiting) Temporary residents (earthquake rebuild)	Farming community Located on key transport route Spatial isolation (high)
Waiau	Hurunui	Severe	High Medium	Permanent residents (newcomers) Temporary residents (earthquake rebuild) Transients (earthquake rebuild)	Farming community Shared services (Rotherham, Culverden) Spatial isolation (moderate)
Ward	Marlborough	High	High	Transients (transiting workers, public) Temporary residents (earthquake rebuild)	Farming community Located on key transport route Spatial isolation (high)
St Arnaud	Tasman	Low	High	Transient (tourists, holiday home, leisure) Temporary residents (earthquake rebuild)	DOC community Tourism dependent (domestic, recreation) Spatial isolation (high)
Rotherham	Hurunui	High	Medium	Permanent residents (new migrants) Temporary residents (workers, earthquake rebuild)	Farming community Satellite to Waiau & Culverden (shared services) Spatial isolation (low)

classified according to distance from an earthquake's epicentre (e.g., impacts in Waiau and Kaikoura were severe, while in Murchison and St Arnaud they were low) it also depends on the way ruptures travel along fault lines and on the degree to which buildings and infrastructure are earthquake-proofed. Seddon was perhaps closer to the earthquake rupture lines than a 'medium' classification would indicate, but had been subject to considerable building and infrastructure strengthening after the 2013 Seddon earthquakes.

There are also temporal differences between earthquake impact and the ensuing effects, with some damage able to be repaired almost immediately and some requiring significant expertise, time and financial resources. As such, a community's post-earthquake experience is also affected by institutional and governance directives and the sources of financial support available. These include: private and government (e.g., EQC) insurance payments; national government emergency-response financial packages and the allocation of additional resources from government agencies (e.g., education and health service support); the allocation of funding and resources through local government channels; and, funding and support from a range of aid agencies (e.g., Red Cross).

The second earthquake impact was on the transport network, with the closure of the east coast road (SH1) and rail corridor, and the concomitant increase in traffic on the Inland Road (to Kaikoura) and the alternative inland route connecting Christchurch and Blenheim. The effect of this transport network disruption (assessed as being either high, medium or low for each community in Table 14) extended the earthquake impacts well beyond the immediate earthquake area (e.g., the impact on the 'distant' community of St Arnaud has been high). The change in degree of impact that has occurred over time, as occurred in Waiau with high initial impact – until SH1 (south) re-opened – followed by medium impact is indicated by the dual Waiau classification (i.e., as both high and medium impact).

The classification also makes no differentiation between positive and negative impact. In some of the communities which experienced high impact (e.g., Murchison and St Arnaud) the majority of media reports have described positive economic benefits alongside some (considerably fewer) negative community impacts. Other communities classified as high impact reported primarily negative impacts such as, for example, the loss of business opportunities in Ward and Kaikoura. Generally speaking, those communities close to the earthquake epicentre experienced high impact in respect of both impact measures. For these communities, the impact of the transport network disruption was negative, whereas the communities located along the alternative inland route (who had low settlement impact) was more positive.

As Table 15 shows, the four case study communities represent the range of impact experiences outlined above.

Table 15 Degree of earthquake impact on case study settlements selected

	Settlement impact	Transport network impact
Blenheim	Medium	Low
Kaikoura	Severe	High (negative)
Waiau	Severe	High to medium
St Arnaud	Low	High (positive)

Community characteristics

The third set of selection factors encapsulate some of the demographic, economic and spatial characteristics – identified in both the literature review and preliminary fieldwork – with potential to impact on a community's resilience. In Table 14, the key population groups (in respect of transience) are reported along with its salient (in respect of community resilience) economic and spatial features. While to some extent each of the communities visited contained people from all four broad classes of residence shown in the 'population transience continuum' (Table 2) there were variations in the type (and size) of the population groups found within each.

Permanent residents, while present in every community, are only listed in the 'population group' column if there were new migrants from overseas (e.g., Blenheim, Rotherham) or newcomers from other parts of New Zealand present (e.g., Waiau) in the community. Likewise, semi-permanent resident groups were primarily found in Blenheim, Kaikoura, Seddon and Cheviot, with the Kaikoura population being earthquake rebuild workers, rather than the RSE workers found elsewhere (see Table 2). The numerous, and widely dispersed, earthquake rebuild populations have boosted the 'temporary resident' populations in all these communities (with the exception of Seddon) although Kaikoura, Hanmer Springs and Blenheim also have significant numbers of WHS visa holders. Kaikoura and Hanmer Springs also have holiday home owners who might be classed as temporary residents (rather than transient). Tourists (both international and domestic) represent a significant proportion of transient groups along with a variety of people who are merely transiting a location (for a variety of purposes). However, there were no significant transient population groups reported in either Seddon and Rotherham.

The presence of specific population groups is closely related to the type of economic activity in each community (and its hinterland). Blenheim, as befits its size, has a diverse economy while the majority of the other rural communities visited were agriculture-based (pastoral, dairy farming, horticulture and viticulture). The exceptions to this were the tourism-dependent communities of Kaikoura, Hanmer Springs and St Arnaud. While all three of these communities contain significant numbers of holiday homes, and attract many domestic visitors, Kaikoura is also an important destination for international tourists. The Nelson Lakes National Park attracts many outdoor recreationists and the high-profile presence of DOC staff in St Arnaud confers the settlement with a 'DOC community' moniker.

In respect of community resilience and earthquake impact, spatial isolation and access vulnerability are important indicators of a community's vulnerability and (ultimately) its resilience. Most of the communities were assessed as having 'high' spatial isolation (i.e., they were located a significant distance from other communities). The exceptions were Seddon and Rotherham which were both assessed as having 'low' spatial isolation as they act (to some degree) as satellite communities. Seddon, although along the same stretch of SH1 (north) as Ward, is close enough to Blenheim – and acts both economically and, to some extent, socially as a Blenheim satellite – to have been less affected by the earthquake impact on the transport network. While Waiau is part of a Culverden, Rotherham triumvirate (sharing many community services) its spatial isolation is moderate because of its greater distance from the larger centre of Culverden.

An additional aspect of isolation relates to a community's 'access vulnerability'; as the Kaikoura earthquake showed, Kaikoura is highly vulnerable in respect of access. There were also some access concerns voiced in Hanmer Springs. In respect of access, Blenheim was the 'best placed' settlement as it is connected to other centres via multiple transport options and routes. While most of the other communities are located on major highways and have remained fully 'accessible' they have, nevertheless, been significantly affected by earthquake impact on the transport network.

The above discussion has shown the complexity of the communities contained within the research area. These factors are summarised in Table 16 and show that the four case study settlements represent communities containing a variety of population groups and community types (as described by broad economic and isolation/access factors).

Table 16 Key community characteristics of case study settlements selected

	Population groups	Economic, spatial isolation & access vulnerability
Blenheim	Entire transience continuum represented	Diverse economy, well-connected
Kaikoura	Semi-permanent, temporary & transient	Tourism economy, access vulnerability
Waiau	Limited transient population	Farming economy, moderate connection
St Arnaud	Highly transient population	DOC community, spatial isolation

While idiosyncratic to some degree, each community contains a mix of population groups, each of which can be characterised according their transience and, associated with this, their degree of community integration and, ultimately, their vulnerability in the face of hazard events. In turn, this is an issue for community resilience. The next stage of the research – examining rural community resilience in transient rural communities – will focus on these four communities.

Conclusion

This scoping report has been prepared to provide background material relevant to the wider research project and, as such, takes a broad regional perspective. In it, we have identified the variety of population groups who may be present in rural communities at any given time and explored some of the available data describing these populations. A review of rural change and community resilience literature has provided some contextual data within which the rural communities in the research area might usefully be understood, in respect of their resilience to nature's challenges. The 'challenge' around which the research is based is the impact of the 2016 Kaikoura earthquake on communities located in the Kaikoura, Hurunui, Marlborough and Tasman Districts.

One of the dimensions that has – to the present – received scant attention in community resilience research is the changing nature of rural populations as they adapt to fluctuations in various transient groups. This includes: in-migration, seasonal or casual workers, and the continued growth of tourists (domestic and international) alongside the increasing flow of workers required to service their particular needs. In the New Zealand context, this variable mix now represents a significant component of many rural communities and the economic bases that support them, and is the particular focus of this study. Drawing on the background material described above, and data collected in situ during preliminary fieldwork visits to nine communities we have proposed a 'population transience continuum'. This continuum classifies these population groups according to key demographic and social characteristics, and the extent to which they are integrated into the community.

The overall aim of this scoping exercise was to select four case study communities for further investigation. Based on the identification of key features – relating to each community's settlement type, earthquake impact and community characteristics – we have selected the communities of Blenheim, Kaikoura, Waiau and St Arnaud. The next stage of the research will be a comprehensive examination of the formal and informal governance and support structures relevant to each community. This will provide further background material and assist with the identification of key actors with whom we will conduct a series of in-depth qualitative interviews. Additional interviewees (e.g., employers, business leaders, Maori) will be selected to ensure that all of the population groups found in each community are represented. While broadly focused on each community's response and recovery experience of the Kaikoura earthquake event, specific questions will further explore community knowledge of, and engagement with the various population groups found within their community to identify the key networks which connect population groups within communities. Ultimately, these findings will be used to identify principles and practices to inform tools for resilience building, in parallel with effective emergency management, elsewhere in New Zealand.

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